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DEPARTMENT OF THE INTERIOR
HUBERT WORK, Secretary

UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, Director

BULLETIN 709

TRIANGULATION AND PRIMARY TRAVERSE 1916–1918

POLITECHNIKA GDAŃSKA

C. H. BIRDSEYE, CHIEF TOPOGRAPHIC ENGINEER

POLITECHNIKA GDAŃSKA
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POLITECHNIKA GDAŃSKA • ZAKŁAD GEOLOGII

C. H. BIRDSEYE, CHIEF TOPOGRAPHIC ENGINEER

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PLATE I. Map of the United States, showing condition of astronomic location and primary control V

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GDAŃSKA • POLITECHNIKA
ZAKŁAD
GEOLOGII

MAP OF THE UNITED STATES SHOWING CONDITION OF ASTRONOMIC LOCATION AND PRIMARY CONTROL

to January 1, 1919

POLITECHNIKA GDAŃSKA ZAKŁAD GEOLOGII

TRIANGULATION AND PRIMARY TRAVERSE, 1916–1918.[1]

C. H. BIRDSEYE, Chief Topographic Engineer.

INTRODUCTION.

PERSONNEL.

Field work.—The field work of primary control, the computed results of which are given in the following pages, was carried on during 1916 under W. H. Herron, acting chief geographer, with Frank Sutton, Glenn S. Smith, C. H. Birdseye, George R. Davis, T. G. Gerdine, geographers, in charge respectively of the Atlantic, Central, Rocky Mountain, Pacific, and Northwestern divisions.

During 1917 and 1918, when military mapping was carried on for the War Department, the assignments were as follows: Chief Geographer, R. B. Marshall; Southeastern, Northeastern, Central, Southern, and Eastern departments, W. H. Herron and T. G. Gerdine, geographers, in charge; Western Department, George R. Davis, geographer, in charge.

Credit is given to the various topographers, assistant topographers, and aids directly in charge under the headings of the several lists.

Computation.—The office computations were made under the supervision of E. M. Douglas, geographer. The results were computed by the following members of the topographic branch, detailed from time to time to this work: D. H. Baldwin, T. M. Bannon, E. C. Bebb, L. F. Biggs, D. S. Birkett, R. H. Blain, H. Dewhirst, George T. Hawkins, G. W. Hodgkins, Oscar Jones, C. B. Kendall, J. L. Lenovitz, S. G. Lunde, D. T. McNair, E. L. McNair, J. B. Metcalfe, jr., J. F. McBeth, F. J. McMaugh, A. W. Phelps, G. Risegari, H. S. Senseney, J. G. Staack, W. E. Trimble, C. F. Urquhart, J. H. Wilson, C. R. Wingate, jr., and B. H. Yoakum. The data were compiled for publication by S. S. Gannett, geographer.

DATUM.

Wherever practicable, and unless otherwise stated, positions have been computed on North American datum.

[1] Owing to unavoidable delay in publication it has been possible to include for some of the States results of work done in 1919 and 1920.

STATION MARKS.

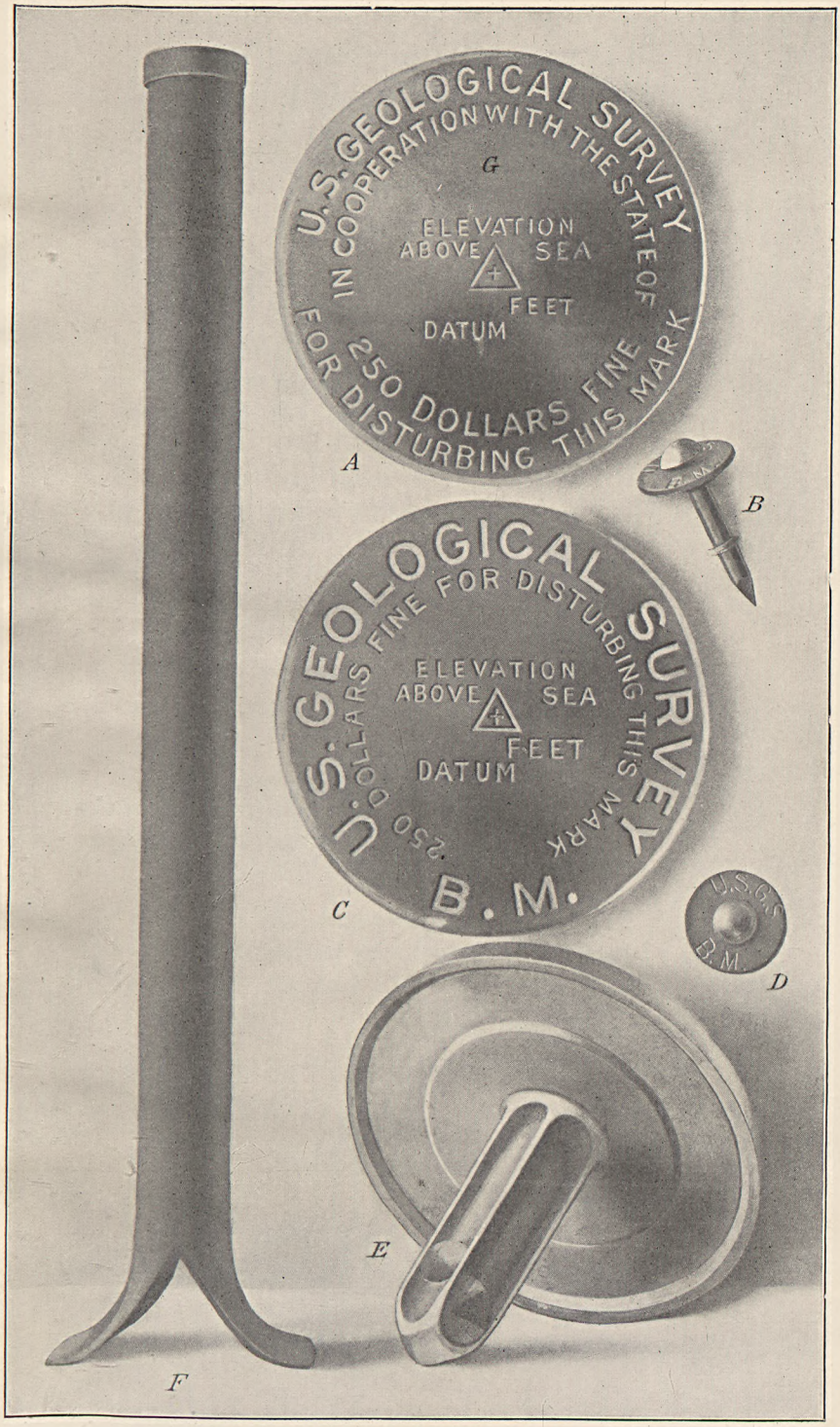
Permanent marks are placed at all occupied triangulation stations and at certain of the primary traverse stations, from 3 to 8 miles apart.

These marks are of the form adopted for leveling bench marks, and in many places the elevation as well as the latitude and longitude has been determined. The marks are of two forms. The first form is a circular bronze or aluminum tablet (*C* and *E*, Pl. II), 3½ inches in diameter and one-fourth inch thick, having a 3-inch stem, which is cemented in a drill hole in solid rock, in the wall of some public building, bridge abutment, or other substantial masonry structure. The second form (*F*, Pl. II), set in the ground where no masonry or rock is available, consists of a hollow wrought-iron post 3½ inches in outside diameter and 4 feet long. The bottom is spread out to a width of 10 inches in order to give a firm bearing on the earth. A bronze or aluminum-bronze cap is riveted upon the top of the post. The tablets, as well as the caps on the iron posts, are appropriately lettered, and where States have cooperated in the work the fact of such cooperation is indicated by the addition of the State name (*G*, Pl. II).

SUMMARY.

Summary of triangulation and primary traverse, 1916–1918.

Locality.	Triangulation stations.	Traverse stations.
Arizona	5	.....
California	238	.....
Delaware-Maryland-West Virginia	17	259
Florida	.....	552
Georgia	.....	4,323
Idaho-Montana	38	.....
Illinois-Wisconsin	.....	619
Iowa-Kansas-Missouri-Nebraska-Oklahoma	.....	1,505
Kentucky-Tennessee	17	468
Maine-New Hampshire	99	.....
Michigan	.....	692
Nevada	14	.....
New Mexico	132	.....
New York	.....	365
North Carolina	15	572
Oregon-Washington	79	1,606
South Carolina	.....	5,400
Texas	127	229
Virginia	.....	2,927
Wyoming-Colorado	46	.....
	827	19,517



GEOLOGICAL SURVEY STATION MARKS.

A, Tablet used in cooperating States. The State name is inserted at *G*.
B and *D*, Copper temporary bench mark, consisting of a nail and copper washer.
A, *C*, and *E*, Tablets for stone or concrete structures.
F, Iron post used where there is no rock.

DELAWARE.

PRIMARY TRAVERSE.

Cape Henlopen, Cedar Creek, Harrington, Millsboro, and Rehoboth quadrangles.

KENT AND SUSSEX COUNTIES.

The following geographic positions on North American datum are based upon U. S. Coast and Geodetic Survey triangulation stations and U. S. Geological Survey primary traverse positions in this locality. The work was done by J. H. Wilson in 1917.

For additional geographic positions in Delaware, see U. S. Geological Survey Bulletins 181, 245, and 496, and U. S. Coast and Geodetic Survey Report for 1893, Part II. The U. S. Coast and Geodetic Survey also has many unpublished data.

CAPE HENLOPEN QUADRANGLE.

Near Broad Kiln Creek.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Broad Kiln Creek, 0.75 mile southeast of drawbridge over, at road forks south, on east side of road, 1 foot from fence around small chicken yard; iron post stamped "Prim. Trav. Sta. No. 6, 1917"	38 47 05.4	75 14 27.8	
Road crossing on north-south road; 310 feet east is crossing on east-west road	38 46 09.9	75 14 19.9	5,653

CEDAR CREEK QUADRANGLE.

East along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Browns Branch, center of bridge over	38 58 55.4	75 28 49.4	
Postles schoolhouse, 1,600 feet south of; road fork to west	38 58 42.6	75 27 05.7	8,294
Postles schoolhouse, 0.5 mile north of; road south	38 59 22.4	75 26 49.5	4,220
Crossroads	38 59 40.6	75 25 26.0	6,847
Thompsonville, at northwest corner of Thompson's store; iron post stamped "Prim. Trav. Sta. No. 4, 1917"	38 59 57.5	75 23 23.6	9,808
Crossroads	38 59 27.9	75 22 17.4	6,027
Road forks	38 59 48.1	75 21 28.7	4,351
Stone triangulation station on beach of Delaware Bay, in Kent County, on land of William McColly, 10 miles from town of Milford and 8 miles from Frederica. Station mark: Two joints of draintile, each 3 feet long and 5 inches in diameter, one above the other, and filled with concrete. Distance from center of station to about high-water mark, 227 feet; distance from station to northwest corner of Ben Needle's house, 750 feet (paced); distance from station to northwest corner of Charles Macklin's house, 234.8 feet. NOTE.—Station is buried under 1 foot of sand. A piece of an old cookstove was placed over the station as a guide for topographers. (U. S. C. & G. S. station.)	39 00 03.70	75 19 40.87	8,660

CEDAR CREEK QUADRANGLE—Continued.

East along Pennsylvania Railroad from Harrington to Milford.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	38 55 04.2	75 29 33.9	.....
Road crossing, 870 feet west of milepost 6	38 55 06.9	75 28 28.8	5,150
Road crossing	38 55 08.7	75 27 44.9	3,475
Road crossing	38 55 02.4	75 26 58.5	3,722
Road crossing	38 54 54.7	75 26 37.4	1,840
Milford, road crossing at depot, between tracks	38 54 39.7	75 25 58.5	3,431

South along Pennsylvania Railroad from Milford to Redden.

Road crossing, 630 feet south of milepost 9	38 53 57.9	75 25 35.4	4,606
Road crossing, second class, 270 feet north of milepost 10	38 53 15.2	75 25 26.8	4,373
Lincoln City, road crossing just south of depot	38 52 09.0	75 25 27.0	6,700
Road crossing	38 49 56.8	75 25 26.5	13,380
Ellendale, crossing of Pennsylvania and Maryland, Delaware & Virginia railroads	38 48 17.8	75 25 23.8	10,010
Milepost 17; center of track	38 47 07.5	75 25 21.9	7,120
Robbins, road crossing at depot	38 45 43.8	75 25 19.6	8,470
Road rossing	38 45 00.3	75 25 18.4	4,400
Redden, 25 feet from northeast corner of station, 57 feet east of center of railroad track, 12 feet south of center of public road; iron post stamped "Prim. Trav. Sta. No. 8, 1910"	38 44 30.6	75 25 05.5	3,174

East along Maryland, Delaware & Virginia Railway to Ellendale.

Oakley, road crossing at depot	38 48 16.5	75 29 19.2	.....
Road crossing	38 48 16.9	75 28 04.0	5,950
Road crossing	38 48 17.2	75 27 25.6	3,035
Road crossing	38 48 17.6	75 26 06.8	6,235
Ellendale, crossing of Pennsylvania and Maryland, Delaware & Virginia railroads	38 48 17.8	75 25 23.8	3,400

Southeast along highways and Maryland, Delaware & Virginia Railway in southeastern part of quadrangle.

Lincoln City, road crossing just south of depot	38 52 09.0	75 25 27.0	.....
Road forks, 1.25 miles east of Lincoln City	38 52 15.3	75 24 00.0	6,918
Road forks, in line with roads northwest and northeast	38 51 43.3	75 23 18.0	4,628
Anderson's crossroads, 3.5 miles southeast of Lincoln City, on Milford-Milton road, in southwest corner; iron post stamped "Prim. Trav. Sta. No. 5, 1917"	38 51 23.0	75 22 13.3	5,519
Calhoun schoolhouse, crossroads just southeast of	38 50 37.0	75 21 37.6	5,441
Crossroads, Bennett's mail box is in northeast corner	38 50 03.6	75 20 45.5	5,333
T road south, 500 feet east is road northwest	38 49 56.7	75 19 38.9	5,316
Waples old mill, 1,400 feet north of, in center of triangle at road forks; large hickory tree	38 49 47.0	75 18 30.2	5,525
T road, east, 250 feet south is road west	38 48 57.9	75 18 17.4	5,072
Mail box of John C. Lofland; in center of road forks	38 49 12.5	75 17 20.2	4,761
Cades Branch, bridge over	38 48 46.0	75 16 56.4	3,275
Zion Church, 0.5 mile east of, at end of drawbridge; center of triangle at road forks	38 48 20.5	75 16 16.6	4,079
Broad Kiln Creek, center of drawbridge over	38 47 28.7	75 15 04.9	7,725
Beaver Dam Creek, west end of railroad trestle over	38 46 10.4	75 15 22.5	.....
Road crossing	38 46 11.0	75 16 23.7	4,850
Road crossing at brick yard	38 46 11.3	75 17 04.6	3,240
Road crossing, northwest and southeast road	38 46 11.6	75 17 40.0	2,800
Milton, road crossing at depot	38 46 12.2	75 18 43.5	5,425
Milton, 0.5 mile south of, four corners	38 45 55.5	75 18 57.0	1,820

Magnetic declination near north border of quadrangle, 7° 30′ W.; for southeast part of quadrangle, 7° 14′ W.

HARRINGTON QUADRANGLE.

Southeast along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Kent triangulation station; station is in Kent County, about 1 mile north of the Hollandville post office. It is on farm of Llewellyn Dill, in the potato patch just back or east of the apple orchard and within 75 feet of the cattle pound and barn. Tripod 125 feet high	38 59 37.33	75 40 42.62	
Hollandville, 300 feet northeast of road west; road southeast	38 59 07.8	75 39 59.2	4,543
Hollandville, 1.80 miles southeast of, at road forks; center of triangle	38 58 12.4	75 38 16.6	9,856
Maston's Corners, 190 feet west of crossroads, at northwest corner of schoolhouse yard; iron post stamped "Prim. Trav. Sta. No. 1, 1917"	38 58 07.3	75 37 01.6	5,950
William Paskey's mail box; T road north at	38 58 32.1	75 36 15.7	4,406
Maston's Corners, 1.60 miles southeast of, at road forks, 20 feet west of mail box, in line with road south; on telephone pole	38 58 32.0	75 35 23.2	4,147
Maston's Corners, 2.30 miles east of, at colored schoolhouse, railroad crossing; southbound track	38 58 59.1	75 34 46.6	3,985

Along Pennsylvania Railroad.

Milepost 36, railroad crossing; southbound track	38 58 19.2	75 34 45.4	4,040
Harrington, 1.50 miles north of, railroad crossing; southbound track	38 56 58.2	75 34 42.8	8,199
Harrington, at south end of depot platform; crossing of southbound track	38 55 24.6	75 34 39.7	9,480
Milepost 32, at second-class crossing; southbound track	38 54 50.6	75 34 38.6	3,440
Milepost 32, 1.20 miles south of, at road crossing; southbound track	38 53 48.2	75 34 36.6	6,316
Farmington, 1.20 miles north of; railroad crossing	38 53 15.1	75 34 35.5	3,555
Farmington, just north of depot, at road crossing; southbound track	38 52 09.7	75 34 47.1	6,481
Farmington, 1 mile south of, at road crossing; northbound track	38 51 20.3	75 34 57.4	5,066
Farmington, 2.10 miles south of, at second-class road crossing; northbound track	38 50 15.7	75 35 11.1	6,626
Greenwood, 1.80 miles north of, at Kent-Sussex county line; northbound track	38 50 04.5	75 35 13.5	1,156
Greenwood, 1 mile north of, at road crossing; northbound track	38 49 08.1	75 35 25.4	5,780
Greenwood, junction of Pennsylvania Railroad and Maryland, Delaware & Virginia Railway	38 48 32.0	75 35 33.0	3,709
Greenwood, 1.50 miles south of, at road crossing; northbound track	38 47 18.4	75 35 48.6	7,541
Greenwood, 2.60 miles south of, at second-class road crossing; northbound track	38 46 21.6	75 36 00.6	5,831
Bridgeville, 1.40 miles north of, at road crossing; northbound track	38 45 40.7	75 36 09.2	4,195
Bridgeville, 0.70 mile north of, 800 feet north of yard-limit sign, at road crossing; northbound track	38 45 07.1	75 36 16.3	3,445
Bridgeville, at railroad station, in doorstep of ladies' waiting room; copper bolt (Pennsylvania Railroad bench mark)	38 44 31.30	75 36 23.60	3,673

West along highways through center of quadrangle.

T road north	38 51 50.4	75 35 47.7	
J. P. Griffith's mail box, road south at	38 51 34.7	75 36 44.1	4,734
Andrewville, at southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 2, 1917"	38 51 41.5	75 38 08.4	6,704
Marsh Hope Creek, center of bridge over	38 52 10.7	75 39 00.0	5,034
T road southwest	38 52 19.8	75 39 17.6	1,673
T road east; center of triangle	38 51 52.1	75 40 43.3	7,331
Road forks	38 51 43.2	75 40 54.5	1,259
Big Pine, center of crossroads	38 51 02.7	75 41 42.4	5,582
Public forks, road north at	38 50 56.5	75 42 33.4	4,077
Maryland-Delaware State line, 18 feet west of center of crossroads (State line road belongs to Delaware)	38 50 48.5	75 43 28.1	4,402
Mail box 57, center of crossroads at (in Maryland)	38 51 25.1	75 44 02.1	4,585
T road north (in Maryland)	38 51 27.6	75 45 26.2	6,654
Hobbs, Md., railroad crossing at depot (B. 245)	38 51 35.60	75 47 06.10	7,942

HARRINGTON QUADRANGLE—Continued.

East along highways near north border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Railroad crossing (sta. 32, previously tabulated)	38	58	59.1	75	34	46.6	.....
Rice's schoolhouse; T road south at	38	59	02.4	75	34	16.0	2,434
Chimney Hill; T road northwest at	38	59	26.4	75	32	38.7	8,059
Killeen's mill; bridge over mill race at	38	58	57.3	75	31	50.4	4,815
Crossroads	38	58	31.1	75	31	36.8	2,867
Law's Church and schoolhouse, crossroads at, in center of triangle; iron post stamped, "Prim. Trav. Sta. No. 3, 1917"	38	58	42.4	75	30	03.3	7,465

East along Pennsylvania Railroad from Harrington.

Harrington, railroad crossing	38	55	24.55	75	34	39.73	.....
Milepost 1, second-class road crossing at	38	54	53.8	75	33	49.6	5,040
Milepost 2, about 400 feet east of, road crossing	38	54	56.6	75	32	38.5	5,630
Road crossing	38	55	00.8	75	30	56.6	8,065
Houston, road crossing at depot	38	55	02.3	75	30	19.2	2,955

East along Maryland, Delaware & Virginia Railway from Greenwood.

Greenwood, railroad junction at (previously tabulated)	38	48	31.96	75	35	33.02	.....
Road crossing	38	48	21.1	75	34	33.0	4,876
Road crossing	38	48	15.0	75	33	36.2	4,535
Road crossing	38	48	15.2	75	32	48.4	3,780
Owens, road crossing at station	38	48	15.7	75	31	40.8	5,350
Road crossing	38	48	16.2	75	30	06.6	7,460

Magnetic declination near north border of quadrangle, 7° 19′ W.; through center of quadrangle, 7° 07′ W.; for east part of north border of quadrangle, 7° 20′ W.

REHOBOTH QUADRANGLE.

East along highways through center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T road south; W. Burton's mail box at	38	36	12.4	75	13	51.7	.....
Road forks at road southeast, center of triangle of roads, elevation "21" marked on telephone pole	38	36	20.4	75	13	22.4	2,460
T road southeast	38	36	24.8	75	12	41.9	3,237
Harmon schoolhouse, crossroads at, 42 feet west of tree marked "21"	38	36	52.2	75	12	09.6	3,773
Steele's store (old Trinity post office), T lane east at	38	37	23.7	75	11	16.5	5,285
Wines crossroads, in center of triangle; iron post stamped "Prim. Trav. Sta. No. 8, 1917"	38	37	56.9	75	10	55.5	3,755
Road forks, center of timbered triangle formed by roads	38	37	42.3	75	09	39.0	6,236
Road forks, 0.5 mile southeast of Wilson's store; Tingle's mail box	38	37	20.0	75	08	13.3	7,165
Road south	38	37	27.6	75	07	11.1	4,992
Massey triangulation station. Station is on the north side of a wooded ridge on Indian River Neck, on land owned by C. E. Massey, and southwest from the old farmhouse of Peter J. Massey. It may be reached from Rehoboth or Ocean View by water or from the railroad by land. Station mark is a copper triangulation station mark set in cement 3 feet below the surface, and above it is a concrete block, in which is set a 1-inch galvanized-iron pipe 18 inches long, in which is fastened a copper triangulation mark. Reference marks: (1) is cement post with bottle to mark center, 11.335 meters; (2) is cement post with circle and nail to mark center, 13.930 meters	38	37	30.30	75	06	12.77	4,634

REHOBOTH QUADRANGLE—Continued.

East along highways near south border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Frankford, southwest corner of First National Bank building, just above sidewalk; aluminum tablet stamped "Prim. Trav. Sta. No. 7, 1910, 37, 1908"	38	31	03.70	75	14	07.40	.....
Frankford, at east town limits, road forks, just north of schoolhouse	38	31	14.9	75	13	39.4	2,493
Road forks	38	31	33.0	75	12	59.1	3,693
Omar, northeast corner of Methodist Episcopal Church; iron post stamped "Prim. Trav. Sta. No. 7, 1917"	38	31	39.6	75	12	01.6	4,613
Road forks at road east	38	31	57.9	75	11	28.2	3,236
Crossroads at mail box, painted "61"	38	32	03.5	75	10	40.7	3,810
Blackwater Creek, culvert crossing; center of road over	38	32	08.8	75	09	55.7	3,610
Crossroads, center of, at Layton's mail box, No. 10	38	32	15.2	75	08	59.4	4,521
T road north	38	32	22.4	75	07	52.2	5,388
Road forks at blacksmith shop	38	32	25.7	75	07	04.9	3,766
Millville, Dukes & Holloway's store; T road south	38	32	51.2	75	06	47.4	2,933
Road forks	38	32	33.0	75	06	05.7	3,780
Bethel Church, at Ocean View; C. & G. S. triangulation station	38	32	37.97	75	05	30.65	2,827

Magnetic declination near south border of quadrangle, 6.7° W.

MILLSBORO QUADRANGLE.

From Millsboro along highways to east border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Millsboro Trust & Safe Deposit Co's brick building, in front face, on right of door, 1 foot above ground; aluminum tablet stamped "Prim. Trav. Sta. No. 11, 1910, 27"	38	35	25.6	75	17	32.0	.....
Millsboro; center of bridge over Indian River	38	35	41.0	75	17	28.9	1,577
Road forks, at Richmond Stone Company's sign board	38	36	03.7	75	16	56.1	3,472
Road forks, 40 feet northwest of fence post, painted "X 25"	38	36	05.1	75	16	16.2	3,168

Magnetic declination for east border of quadrangle, 7° W.

MARYLAND.

PRIMARY TRAVERSE AND PRIMARY LEVELING.

Gunpowder quadrangle.

HARFORD COUNTY.

Positions are based on latitudes and longitudes of Piney Point (2), Lego Point (2), and Maxwell Point (2), triangulation stations of the U. S. Coast and Geodetic Survey, North American Datum. The primary traverse was done by C. F. Urquhart in 1917–18.

Elevations are based on heights of Baltimore & Ohio Railroad bench marks Nos. 58A and 63A, near Van Bibber.

Primary leveling was done by H. S. Senseney in 1918. Each permanent station mark and bench mark is a bronze tablet set in a cement post 6 inches square on top and 4 feet long embedded 3½ feet in the ground.

For additional geographic positions in Maryland, see U. S. Geological Survey Bulletins 122, 181, 201, 245, 276, 440, 496, 644–K, and Part I of the 20th and 21st Annual Reports.

The U. S. Coast and Geodetic Survey has many unpublished data.

GUNPOWDER QUADRANGLE—Continued.

Along Baltimore & Ohio Railroad.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Van Bibber, 0.5 mile west of, in east end of south coping of east abutment of bridge 19A; copper bolt (B. & O. R. R. b. m. 63A). Elevation, 40.418 feet			
McComas, opposite signboard, westbound track; top of north rail. Elevation, 61.1 feet			
Clayton, opposite station, side track; top of south rail. Elevation, 95.3 feet			
Joppa, opposite station, westbound track; top of north rail. Elevation, 86.7 feet			
Bradshaw, opposite station, westbound track; top of north rail. Elevation, 41.0 feet			
Big Gunpowder bridge, in east end of south coping; copper bolt (B. & O. R. R. b. m. 58A). Elevation, 63.900 feet			

Along highways from Van Bibber to Edgewood, thence along Pennsylvania Railroad to Magnolia, thence north to Baltimore & Ohio Railroad, thence northeast along same to point of beginning.

Edgewood, about 1 mile north of, 40 feet south of T road west, east side of road, in root of stump; copper nail and washer (not marked). Elevation, 87.49 feet			
Milepost 75, 390 feet south of, east coping of box culvert; copper bolt (P. R. R. b. m. 72). Elevation, 20.80 feet; adjusted elevation, 20.899 feet			
Milepost 76, 75 feet north of, southwest coping of box culvert; copper bolt (P. R. R. b. m. 73). Elevation, 36.900 feet			
Edgewood, 1.4 miles southwest of, at midway post, 75 feet south of guardhouse, 35 feet east of second-class road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 56, 1918, 41." Elevation, 41.068 feet. (Distance from station 57.)	39 24 22.07	76 18 53.00	1,418.3
Magnolia, 210 feet southeast of railroad crossing, 60 feet southwest of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 2, 1918, 20." Elevation, 20.086 feet	39 24 04.69	76 19 34.19	1,478.5
Magnolia, 1.2 miles north of, at southeast corner of crossroads, in root of tree; copper nail and washer (not marked). Elevation, 100.83 feet			
Magnolia, 1.8 miles north of, west side of road, at road forks, 12 feet north of gate, in root of tree; copper nail and washer (not marked). Elevation, 115.00 feet			
Clayton, opposite station; top of south rail. Elevation, 95.3 feet			

Along highways from Edgewood to Rickett Point (double-run lines between bench mark 9 and Rickett Point).

Edgewood, 230 feet southeast of railroad crossing, on the reservation line, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 25, 1918, 38." Elevation, 37.720 feet. (Distance from station 23.)	39 24 54.51	76 17 36.08	2,095.1
Edgewood, 0.45 mile south of, 30 feet west of stone road, 20 feet north of second-class road, at edge of woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 23, 1918, 34." Elevation, 33.625 feet. (Distance from station 22)	39 24 34.14	76 17 40.90	1,625.6
Edgewood, 0.7 mile south of, 80 feet east of stone road, 380 feet south of concrete culvert, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 22, 1918, 35." Elevation, 35.007 feet. (Distance from station 21)	39 24 21.70	76 17 27.75	2,152.9
Edgewood, 1.2 miles south of, 50 feet north by 30 feet east of forks of stone road, 420 feet south of narrow-gage railroad crossing, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 21, 1918, 27." Elevation 27.497 feet. (Distance from station 9)	39 24 00.45	76 17 27.15	2,520.5
Edgewood, 1.7 miles south of, in southwest corner of Flatiron Corners, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 9, 1918, 25." Elevation, 24.958 feet. (Distance from station 41)	39 23 35.54	76 17 26.52	1,551.9
Edgewood, 2.1 miles south of, 100 feet west of where road forks to Beach Point, at edge of field, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 10, 1918, 21." Elevation, 21.516 feet. (Distance from station 42)	39 23 13.30	76 17 22.00	1,597.2

GUNPOWDER QUADRANGLE—Continued.

Along highways from Edgewood to Rickett Point (double-run lines between bench mark 9 and Rickett Point)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Edgewood, 2.5 miles south of, 0.3 mile south of where road forks to Beach Point, 25 feet east of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 11, 1918, 21." Elevation, 21.530 feet. (Distance from station 91)	39 23 00.88	76 17 07.71	1,892.7
Edgewood, 2.8 miles south of, on top of hill, 0.3 mile north of gate of road leading to Wilson Point, on east edge of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 12, 1918, 24." Elevation, 24.327 feet. (Distance from station 11)	39 22 45.46	76 17 02.13	1,619.9
Edgewood, 3.1 miles south of, 8 feet south of gate of road leading to Wilson Point, east side of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 13, 1918, 20." Elevation, 19.887 feet. (Distance from station 12)	39 22 30.94	76 17 07.48	1,527.5
Edgewood, 3.4 miles south of, about 0.25 mile west of Dove's Cove, 60 feet west of road, 30 feet east of house, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 14, 1918, 27." Elevation, 27.354 feet. (Distance from station 13)	39 22 18.26	76 17 19.75	1,604.4
Edgewood, 3.8 miles south of, 300 feet southeast of yellow house, 50 feet west of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 15, 1918, 24." Elevation, 23.997 feet. (Distance from station 14)	39 21 59.96	76 17 26.48	1,925.5
Edgewood, 4.2 miles south of, 40 feet west of road, 50 feet north of Maxwell Gate, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 16, 1918, 16." Elevation, 15.604 feet. (Distance from station 15)	39 21 42.23	76 17 24.12	1,803.7
Maxwell Gate, 0.3 mile south of, 50 feet west of road, 50 feet south of old private road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 126, 1918, 18." Elevation, 17.736 feet. (Distance from station 76)	39 21 25.17	76 17 17.54	1,758.6
Maxwell Gate, 0.7 mile south of, 140 feet west of road, 15 feet north of rail fence, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 76, 1918, 31." Elevation, 30.846 feet. (Distance from station 78)	39 21 09.99	76 17 06.63	1,637.9
Maxwell Gate, 1 mile south of, 140 feet west of road, 30 feet east of old house, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 77, 1918, 23." Elevation, 22.688 feet. (Distance from station 76)	39 20 57.88	76 16 51.49	1,707.2
Maxwell Gate, 1.4 miles south of, 240 feet south of road to Bell Farm, 30 feet east of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 75, 1918, 23." Elevation, 22.721 feet. (Distance from station 77)	39 20 48.97	76 16 31.84	1,786.7
Maxwell Gate, 1.7 miles south of, 20 feet east of road forks to Lego Point, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 93, 1918, 11." Elevation, 11.357 feet. (Distance from station 75)	39 20 33.84	76 16 28.52	1,553.3
Maxwell Gate, 2.0 miles south of, 300 feet southwest of lane northwest to house, 20 feet northwest of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 94, 1918, 5." Elevation, 4.688 feet. (Distance from station 93)	39 20 22.24	76 16 41.02	1,530.8
Maxwell Gate, 2.4 miles south of, 70 feet west of road, 140 feet northwest of old log house, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 95, 1918, 15." Elevation, 15.011 feet. (Distance from station 94)	39 20 07.48	76 16 50.72	1,676.
Maxwell Gate, 2.7 miles south of, 20 feet west of road where road makes sharp turn to west, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 96, 1918, 12." Elevation, 12.055 feet. (Distance from station 95)	39 19 52.96	76 16 51.38	1,470.3
Maxwell Gate, 3 miles south of, 600 feet north of G. W. Beal's old residence, 280 feet north of bend in road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 97, 1918, 20." Elevation, 19.948 feet. (Distance from station 96)	39 19 52.79	76 17 09.97	1,460.9
Maxwell Gate, 3.2 miles south of, 320 feet south of T lane west, 10 feet east of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 99, 1918, 24." Elevation, 23.638. (Distance from station 97)	39 19 38.71	76 17 04.50	1,487.4
Maxwell Gate, 3.5 miles south of, 45 feet south of road forks, in line with road north, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 100, 1918, 14." Elevation, 13.825 feet. (Distance from station 99)	39 19 23.15	76 16 54.52	1,758.9
Maxwell Gate, 3.9 miles south of, 170 feet southeast of bend in road, 25 feet southwest of rail fence, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 101, 1918, 31." Elevation, 31.165 feet. (Distance from station 100)	39 19 08.50	76 17 01.85	1,590.1
Maxwell Gate, 4.4 miles south of, 18 feet west of road, about 0.25 mile south of marsh, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 102, 1918, 5." Elevation, 5.497 feet. (Distance from station 101)	39 18 51.30	76 17 09.75	1,847.4

GUNPOWDER QUADRANGLE—Continued.

Along highways from Edgewood to Rickett Point (double-run lines between bench mark 9 and Rickett Point)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Maxwell Gate, 4.8 miles south of, 30 feet south of gate across road, 12 feet west of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 103, 1918, 7." Elevation, 7.187 feet. (Distance from station 102)	39 18 30.24	76 17 22.61	2,358.6
Maxwell Gate, 5.2 miles south of, about 0.5 mile northeast of Rickett Point, about 700 feet east of house, 240 feet northeast of rail fence, 3 feet east of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 104, 1918, 14." Elevation, 13.993 feet. (Distance from station 103)	39 18 12.83	76 17 33.40	1,955.2
Rickett Point, about 0.5 mile east of, on beach 20 feet north of high water, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 105, 1918, 5." Elevation, 5.258 feet. (Distance from station 106)	39 18 00.32	76 17 23.72	2,032.6

Along highways from bench mark 9 via bench marks 38, 36, 33, etc., to bench mark 56.

Flatiron Corners, 0.3 mile southwest of, about 0.3 mile east of barracks, 60 feet north of road, on west side of large oak tree, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 41, 1918, 30." Elevation, 29.702 feet. (Distance from station 40)	39 23 23.02	76 17 37.95	1,904.6
Edgewood Barracks, 870 feet west of barrack No. 1, north side of road, 150 feet southeast of two water towers, on west side of big locust tree, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 38, 1918, 34." Elevation, 33.602 feet. (Distance from station 39)	39 23 15.79	76 18 22.91	1,408.0
Canal Creek, 0.25 mile east of mouth of, 50 feet north of beach, 6 feet south of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 37, 1918, 13." Elevation, 12.986 feet. (Distance from station 38.)	39 23 13.72	76 18 43.38	1,634.4
Canal Creek, 0.15 mile west of mouth of, 0.25 mile southeast of San Domingo Club, 100 feet south of road, 60 feet north of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 36, 1918, 19." Elevation, 19.028 feet. (Distance from station 37.)	39 23 21.47	76 19 11.63	2,235.6
San Domingo Club, 420 feet northwest of, 50 feet northeast of lone pear tree, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 35, 1918, 38." Elevation, 38.423 feet. (Distance from station 34.)	39 23 35.77	76 19 24.84	1,803.0
Magnolia, about 0.4 mile southeast of, about 0.4 mile north of San Domingo Club, 320 feet east of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 33, 1918, 37." Elevation, 36.614 feet. (Distance from station 3.)	39 23 51.87	76 19 13.51	1,542.0
Magnolia, about 0.2 mile east of, 25 feet east of road south to San Domingo Club, north side of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 3, 1918, 36." Elevation, 36.143 feet. (Distance from station 4.)	39 24 07.02	76 19 15.59	1,595.4
Magnolia, about 0.5 mile east of, 200 feet southeast of farmhouse, north side of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 4, 1918, 41." Elevation, 41.065 feet. (Distance from station 5.)	39 24 10.84	76 18 55.86	1,706.4

From bench mark 100 via bench marks 113, 114, and 98 to bench mark 97.

Days Point, 0.8 mile southeast of, 110 feet southeast of house, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 113, 1918, 41." Elevation, 40.634 feet. (Distance from station 101.)	39 19 18.27	76 17 18.79	1,658.6
Days Point, 0.4 mile southeast of, about 0.25 mile southwest of house, 60 feet east of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 114, 1918, 8." Elevation, 7.932 feet. (Distance from station 113.)	39 19 29.88	76 17 37.35	1,875.5
Days Point, 0.4 mile east of, 250 feet northeast of house; 20 feet north of northwest corner of corncrib, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 98, 1918, 26." Elevation, 26.322 feet. (Distance from station 97.)	39 19 44.28	76 17 29.65	1,770.4

GUNPOWDER QUADRANGLE—Continued.

From bench mark 94 to bench mark 127 (checked spur).

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Watson Creek, 0.7 mile southeast of mouth of, about 0.4 mile northwest of house, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 127, 1918, 9." Elevation, 8.564 feet. (Distance from station 94.)	39 20 32.35	76 17 04.63	2,118.2

From bench mark 76 via bench marks 83 and 82 to bench mark 77.

Old Bell residence, 0.85 mile northwest of, about 0.25 mile west of Cooper Creek, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 83, 1918, 25." Elevation, 25.087 feet. (Distance from station 76.)	39 21 26.12	76 16 55.52	1,850.9
Old Bell residence, 0.50 mile northwest of, 0.2 mile west of Cooper Creek, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 82, 1918, 29." Elevation, 28.681 feet. (Distance from station 83.)	39 21 07.76	76 16 39.90	2,226.1

From bench mark 97 via bench mark 116 to bench mark 98.

Days Point, 0.6 mile northeast of, about 0.3 mile north of house, at edge of woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 118, 1918, 24." Elevation, 24.085 feet. (Distance from station 97.)	39 20 04.14	76 17 24.92	1,642.5
Days Point, 0.8 mile northeast of, on east side of old unused road through woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 117, 1918, 19." Elevation, 18,683 feet. (Distance from station 118.)	39 20 21.98	76 17 36.65	2,026.8
Days Point, 1.1 miles north of, 0.2 mile south of mouth of Watson Creek, 10 feet east of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 116, 1918, 6." Elevation, 6.504 feet. (Distance from station 117.)	39 20 42.67	76 17 45.86	2,215.2
Days Point, 0.5 mile north of, 30 feet east of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 115, 1918, 10." Elevation, 9.749 feet. (Distance from station 116).	39 20 08.93	76 17 58.95	3,563.8

From Maxwell Gate to Maxwell Point (checked spur).

Maxwell Gate, 0.5 mile west of, 20 feet north of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 17, 1918, 9." Elevation, 8.612 feet. (Distance from station 16).	39 21 31.76	76 17 53.90	2,567.9
Maxwell Gate, 0.9 mile west of, 30 feet north of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 18, 1918, 7." Elevation, 7.213 feet. (Distance from station 17).	39 21 27.01	76 18 17.83	1,941.1
Maxwell Point, 1 mile southeast of, about 0.5 mile northwest of mouth of Watson Creek, 50 feet north of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 80, 1918, 5." Elevation, 5.379 feet. (Distance from station 19)	39 21 10.15	76 18 21.22	1,783.7
Maxwell Gate, 1.2 miles west of, 30 feet south of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 19, 1918, 6." Elevation, 6.056 feet. (Distance from station 18).	39 21 21.64	76 18 38.44	1,707.7
Maxwell Gate, 1.6 miles west of, about 0.3 mile east of Maxwell Point, 30 feet north of lower road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 20, 1918, 14." Elevation, 14.430 feet. (Distance from station 19)	39 21 24.11	76 19 02.78	1,928.6

From bench mark 126 via bench marks 81, 79, and 78 to bench mark 76.

Maxwell Gate, 0.4 mile southwest of, 120 feet southeast of southeast corner of old Maxwell residence, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 81, 1918, 31." Elevation, 31.498 feet. (Distance from station 126)	39 21 21.61	76 17 35.66	1,468.3
Watson Creek, 0.2 mile north of mouth of, 50 feet east of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 79, 1918, 11." Elevation, 10.787 feet. (Distance from station 80)	39 21 02.38	76 17 46.21	2,860.3
Watson Creek, 0.3 mile east of mouth of, about 0.5 mile southeast of old Maxwell residence, in woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 78, 1918, 7." Elevation, 6.523 feet. (Distance from station 79)	39 20 59.87	76 17 22.89	1,849.4

GUNPOWDER QUADRANGLE—Continued.

From bench mark 21 via bench marks 44, 46, etc., to bench mark 48 (checked spur).

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Edgewood, about 1.1 miles south of, about 0.3 mile east of stone road, 20 feet north of road to docks, in concrete post; bronze tablet stamped "Prim. Trav.Sta No. 44, 1918, 25." Elevation, 25.414 feet. (Distance from station 22)	39 24 09.54	76 17 05.45	2,139.5
Edgewood, about 1.3 miles southeast of, about 1 mile northwest of docks, 50 feet north of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 45, 1918, 13." Elevation, 13.260 feet. (Distance from station 44)	39 24 04.48	76 16 42.02	1,909.0
Bush River Docks, about 0.4 mile northwest of, 180 feet east of road crossing, in road, 3 feet south of ditch, 6 inches below surface, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 46, 1918, 20." Elevation, 19.683 feet. (Distance from station 45)	39 23 51.55	76 16 29.10	1,655.3
Bush River Docks, 0.1 mile west of, 70 feet east of house, on hill, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 47, 1918, 26." Elevation, 25.658 feet. (Distance from station 46)	39 23 44.55	76 16 12.42	1,489.0
Kings Creek, 0.25 mile northeast of mouth of, 25 feet north by 25 feet west of end of telephone line, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 48, 1918, 7." Elevation, 7.047 feet. (Distance from station 50)	39 23 32.95	76 15 56.12	2,063.1

From bench mark 15 to bench mark 84.

Edgewood, about 3.8 miles south of, about 0.25 mile southwest of yellow house, on main road at Doves Cove, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 84, 1918, 20." Elevation, 19.742 feet. (Distance from station 15)	39 21 57.36	76 17 44.67	1,452.7

From bench mark 14 via bench marks 87, 86, and 92 to bench mark 38.

Wright Creek, 0.4 mile southeast of mouth of, about 0.5 mile west of Doves Cove, on south side of old road through woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 87, 1918, 20." Elevation, 20.257 feet. (Distance from station 14)	39 22 18.06	76 17 41.19	1,684.1
Swaderick Creek, 0.6 mile northeast of mouth of, about 1,200 feet south of old unused road, 150 feet south of field, in woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 85, 1918, 16." Elevation, 16.099 feet. (Distance from station 84)	39 22 05.49	76 17 57.91	1,325.3
Swaderick Creek, 0.3 mile north of mouth of, 20 feet east of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 86, 1918, 5." Elevation, 4.771 feet. (Distance from station 85)	39 21 55.38	76 18 20.03	2,015.2
Wright Creek, 0.14 mile south of mouth of, 60 feet east of beach, on south side of old road through woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 88, 1918, 9". Elevation, 8.924 feet. (Distance from station 86)	39 22 21.84	76 18 06.70	2,874.2
Wright Creek, 0.35 mile north of mouth of, 25 feet east of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 92, 1918, 11." Elevation, 11.178 feet. (Distance from station 88)	39 22 46.13	76 18 11.43	2,486.7
Edgewood Barracks, about 0.3 mile south of water towers, 60 feet west of road, 30 feet east of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 39, 1918, 16." Elevation, 16.419 feet. (Distance from station 92)	39 23 02.10	76 18 19.72	1,742.0

From bench mark 23 via bench mark 24 to bench mark 6.

Edgewood, about 0.8 mile southwest of, about 0.4 mile southwest of stone road, at top of hill, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 24, 1918, 39." Elevation, 38.857 feet. (Distance from station 23)	39 24 22.57	76 18 02.15	2,038.6

GUNPOWDER QUADRANGLE—Continued.

From bench mark 10 via bench mark 51 to Beach Point.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Beach Point, 0.7 mile southwest of, 8 feet south of road to Philadelphia Club, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 52, 1918, 23." Elevation, 23.188 feet. (Distance from station 10)	39 23 09.82	76 16 54.34	2,200.3
Beach Point, 0.45 mile southwest of, 600 feet west of Philadelphia Club, 30 feet south of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 51, 1918, 14." Elevation, 14.030 feet. (Distance from station 52)	39 23 10.16	76 16 33.70	1,621.0
Beach Point, 670 feet southwest of, 45 feet southeast of Kings Creek, 65 feet north of old road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 50, 1918, 10." Elevation, 10.483 feet. (Distance from station 51)	39 23 16.26	76 16 11.23	1,869.1
Beach Point, 0.5 mile southwest of, about 0.4 mile northwest of Wilson Point, 50 feet west of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 53, 1918, 8". Elevation, 8.455 feet. (Distance from station 51)	39 22 52.19	76 16 32.50	1,820.9
From bench mark 10 to bench mark 49 (checked spur).			
Beach Point, 0.4 mile northwest of, 25 feet west of beach, at end of old wood road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 49, 1918, 7." Elevation, 7.227 feet. (Distance from station 50)	39 23 28.59	76 16 33.92	2,174.6
From bench mark 93 to Lego Point.			
Lego Point, about 1 mile northwest of, 15 feet north of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 119, 1918, 5." Elevation, 4.722 feet. (Distance from station 93)	39 20 22.71	76 16 14.68	1,565.8
Lego Point, about 0.7 mile west of, 65 feet west of house, 3 feet north of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 120, 1918, 8." Elevation, 7.782 feet. (Distance from station 119)	39 20 10.23	76 15 57.92	1,823.4
Lego Point, about 0.4 mile west of, about 600 feet south of observation tower, 12 feet south of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 121, 1918, 5." Elevation, 5.072 feet. (Distance from station 120)	39 20 15.30	76 15 35.98	1,798.4
From bench mark 75 via Briery and Sandy points and bench mark 122 to point of beginning.			
Edgewood, 5.6 miles south of, at southwest corner of old Bell farmhouse, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 74, 1918, 27." Elevation, 26.783 feet. (Distance from station 75)	39 21 00.21	76 16 07.87	2,201.4
Old Bell farm, about 0.3 mile north of, about 800 feet north of Sunshine Club, 180 feet west of beach, on hill, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 73, 1918, 22." Elevation, 22.262 feet. (Distance from station 74)	39 21 14.78	76 16 02.89	1,525.2
Briery Point, 80 feet west of, on beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 72, 1918, 5." Elevation, 5.409 feet. (Distance from station 73)	39 21 32.61	76 15 58.13	1,843.9
Sandy Point, 1,150 feet west of, 90 feet southwest of beach, 310 feet southeast of rail fence, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 123, 1918, 8." Elevation, 8.391 feet. (Distance from station 74)	39 20 51.22	76 15 40.91	2,304.4
Sandy Point, about 0.5 mile southwest of, about 0.4 mile south of the old Bell house, 30 feet east of rail fence, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 122, 1918, 8." Elevation, 7.816 feet. (Distance from station 123)	39 20 43.13	76 15 59.42	1,668.4
From bench mark 103 to Robins Point.			
Robins Point, 0.4 mile northwest of, north side of old unused road through woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 106, 1918, 12." Elevation, 12.423 feet. (Distance from station 105)	39 18 16.96	76 17 09.05	2,032.6
Robins Point, 925 feet north of, 15 feet from beach where old unused road ends, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 107, 1918, 4." Elevation, 3.904 feet. (Distance from station 106)	39 18 07.97	76 16 54.23	1,472.7

GUNPOWDER QUADRANGLE—Continued.

From bench mark 102 to bench mark 108 (checked spur).

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Robins Point, about 0.7 mile north of, about 0.3 mile southwest of Ford Point, on hill 60 feet west of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 108, 1918, 14." Elevation, 14.008 feet. (Distance from station 102)	39 18 36.68	76 16 53.39	1,960.0

From bench mark 100 via bench marks 112 and 111 to point of beginning.

Boone Creek, 0.75 mile southwest of mouth of, 1,220 feet north of house, in woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 112, 1918, 5." Elevation, 5.192 feet. (Distance from station 100)	39 19 39.00	76 16 46.52	1,723.1
Boone Creek, 0.45 mile southwest of mouth of, 30 feet west of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 111, 1918, 4." Elevation, 4.080 feet. (Distance from station 112)	39 19 34.82	76 16 17.76	2,299.1

From bench mark 100 to bench mark 110 (checked spur).

Ford Point, 0.5 mile north of, 10 feet west of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 110, 1918, 7". Elevation, 7.488 feet. (Distance from station 109)	39 19 16.64	76 16 39.49	2,012.3

From bench mark 101 to bench mark 109 (checked spur).

Ford Point, 0.22 mile northwest of, on high ground between marshes, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 109, 1918, 9". Elevation, 8.634 feet (distance from station 101)	39 18 58.29	76 16 49.37	1,424.3

From bench mark 95 to bench mark 125 (checked spur).

Boone Creek, 0.5 mile west of mouth of, 0.3 mile southeast of old log house, on main road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 125, 1918, 7". Elevation, 7.008 feet. (Distance from station 95)	39 19 59.45	76 16 31.52	1,713.3

From bench mark 9 via bench marks 8, 7, 6, and 5 to bench mark 56.

Flatiron Corners, 0.35 mile northwest of, in angle made by the old Magnolia road and new cut road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 8, 1918, 9". Elevation, 9.220 feet. (Distance from station 9)	39 23 50.35	76 17 39.61	1,817.2
Flatiron Corners, 0.7 mile northwest of, south side of road, 200 feet west of railroad crossing, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 7, 1918, 36". Elevation, 35.738 feet. (Distance from station 8)	39 24 00.77	76 17 59.42	1,878.8
Flatiron Corners, 0.8 mile northwest of, 10 feet south of road, 240 feet east of railroad crossing, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 6, 918, 23". Elevation, 22.666 feet. (Distance from station 7)	39 24 06.73	76 18 16.11	1,441.6
Flatiron Corners, 1.3 miles northwest of, about 0.8 mile east of Magnolia, 350 feet west of old red brick schoolhouse, 10 feet north of road, at road forks, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 5, 1918, 11". Elevation, 11.082 feet. (Distance from station 6)	39 24 14.07	76 18 34.53	1,625.8

GUNPOWDER QUADRANGLE—Continued.

From Pennsylvania R. R. bench mark 72 via bench marks 26, 61, and 63 to point of beginning.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	Feet.
Edgewood, 0.25 mile northeast of, 30 feet south of south rail, 2 feet north of right of way line, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 26, 1918, 32". Elevation, 31.869 feet. (Distance from station 25)	39 25 03.11	76 17 20.25	1,516.7
Edgewood, 0.5 mile northeast of, 30 feet south of south rail, 1 foot south of right of way line, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 60, 1918, 26". Elevation, 25.688 feet. (Distance from station 26)	39 25 10.42	76 17 02.81	1,556.2
Edgewood, 0.8 mile northeast of, 150 feet south of right of way line, at west edge of woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 61, 1918, 20". Elevation, 20.476 feet. (Distance from station 60)	39 25 16.37	76 16 44.19	1,580.4
Edgewood, 0.8 mile east of, about 0.4 mile southeast of railroad, 80 feet north of Lauderick Creek, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 62, 1918, 6". Elevation, 5.682 feet. (Distance from station 61)	39 24 57.08	76 16 42.17	1,957.9
Edgewood, 0.5 mile east of, west side of old road to Lauderick Creek, 25 feet east of rail fence, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 63, 1918, 21". Elevation, 21.460 feet. (Distance from station 62)	39 24 52.31	76 17 00.97	1,551.3
Edgewood, 0.8 mile southeast of, about 0.1 mile north of point made by the upper forks of Lauderick Creek, west side of old road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 64, 1918, 9". Elevation, 9.038 feet. (Distance from station 63)	39 24 38.65	76 16 47.28	1,750.3
From bench mark 13 via bench marks 69, 55, and 54 to point of beginning.			
Wilson Point, 0.6 mile southwest of, on point on north side of Dove's Cove, 70 feet west of shore line, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 69, 1918, 4". Elevation, 4.232 feet. (Distance from station 14)	39 22 15.79	76 16 54.68	1,984.0
Wilson Point, 0.4 mile west of, 100 feet south of lane, 460 feet east of house, in concrete post; bronze tablet stamped "Prim. Trav. Sta. "No. 55, 1918, 31." Elevation, 31.268 feet. (Distance from station 69)	39 22 33.39	76 16 45.25	1,927.5
Wilson Point, 80 feet west of, 0.5 mile east of house on hill, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 54, 1918, 11." Elevation, 10.979 feet. (Distance from station 55)	39 22 36.86	76 16 20.15	2,001.7
From bench mark 15 to bench mark 71 (checked spur).			
Cooper Creek, 0.4 mile west of mouth of, 500 feet southwest of house, at east side of gate, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 70, 1918, 26." Elevation, 26.190 feet. (Distance from station 15)	39 21 50.22	76 16 49.07	3,099.2
Cooper Creek, 600 feet west of mouth, 30 feet west of beach, 40 feet south of house, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 71, 1918, 12." Elevation, 11.665 feet. (Distance from station 70)	39 21 46.37	76 16 29.18	1,609.9
From bench mark 9 to bench mark 43 (checked spur).			
Flatiron Corners, 0.3 mile east of, 55 feet north of road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 42, 1918, 11." Elevation, 10.822 feet. (Distance from station 9)	39 23 39.37	76 17 06.78	1,597.2
Flatiron Corners, 0.6 mile east of, at end of road to Kings Creek, 60 feet east of two-story frame house, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 43, 1918, 14." Elevation, 14.056 feet. (Distance from station 42)	39 23 38.15	76 16 47.76	1,498.5
From bench mark 8 to bench mark 30 (checked spur).			
Flatiron Corners, 0.3 mile west of, 750 feet southwest of road to Magnolia, on west edge of marsh, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 30, 1918, 9." Elevation, 9.099 feet. (Distance from station 8)	39 23 44.16	76 17 45.62	784.0

GUNPOWDER QUADRANGLE.—Continued.

From bench mark 33 via bench marks 31 and 29 to bench mark 8.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Canal Creek, 0.3 mile north of mouth of, about 0.3 mile northeast of San Domingo Club, in woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 34, 1918, 18." Elevation, 17.556 feet. (Distance from station 33)	39 23 37.95	76 19 02.05	1,670.8
Magnolia, about 0.65 mile southeast of, about 0.45 mile south of road to Flatiron Corners, 105 feet south of big oak tree, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 32, 1918, 36." Elevation, 35.518 feet. (Distance from station 33)	39 23 47.42	76 18 58.75	1,243.1
Magnolia, about 0.8 mile southeast of, about 0.2 mile southeast of the Cell Building, 100 feet north of marsh, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 31, 1918, 8." Elevation, 7,800 feet. (Distance from station 32)	39 23 52.64	76 18 38.28	1,691.6
Magnolia, about 1.0 mile southeast of, about 0.25 mile west of large gas tank, 90 feet east of marsh, on top of hill, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 28, 1918, 13." Elevation, 13.440 feet. (Distance from station 31)	39 23 42.44	76 18 35.49	1,055.0
Magnolia, about 1.5 miles southeast of, 300 feet south of filling plant, 6 feet north of heavy wire fence, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 29, 1918, 11." Elevation, 11.337 feet. (Distance from station 30)	39 23 34.49	76 18 03.76	1,726.8

From bench mark 45 via bench mark 68 to bench mark 47.

Lauderick Creek, 0.5 mile northwest of mouth of, 60 feet south of creek, on bluff, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 67, 1918, 12." Elevation, 12.041 feet. (Distance from station 65)	39 24 22.81	76 16 33.55	1,217.4
Lauderick Creek, on point south of mouth of, 25 feet south of beach, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 68, 1918, 9." Elevation, 9.115 feet. (Distance from station 67)	39 24 09.92	76 16 08.92	2,332.2

From bench mark 22 to bench mark 65 (checked spur).

Edgewood, 0.6 mile southeast of where old road to Lauderick Creek enters woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 66, 1918, 30." Elevation, 30.311 feet. (Distance from station 22)	39 24 32.14	76 17 08.97	1,813.3
Edgewood, 0.9 mile southeast of, 30 feet west of Lauderick Creek, where old road ends, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 65, 1918, 14." Elevation, 13.907 feet. (Distance from station 66)	39 24 27.80	76 16 47.66	1,730.3

From bench mark 41 via bench marks 40, 124, 90, and 91 to bench mark 11.

Edgewood Barracks, 5.6 feet south by 6.6 feet east of, northwest corner of barrack No. 15, under building, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 40, 1918, 27." Elevation, 27.513 feet. (Distance from station 41)	39 23 15.42	76 18 00.15	1,904.6
Edgewood Barracks, about 0.3 mile south of barrack No. 16, 10 feet south of sharp bend in trail, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 124, 1918, 15." Elevation, 14.633 feet. (Distance from station 39)	39 23 05.61	76 17 49.77	2,378.0
Edgewood Barracks, about 0.7 mile south of, 120 feet south of old road through woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 90, 1918, 16." Elevation, 16.278 feet. (Distance from station 91)	39 22 50.17	76 17 51.04	1,700.5
Edgewood Barracks, about 1 mile southeast of, 270 feet south of old road through woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 91, 1918, 11." Elevation, 11.171 feet. (Distance from station 11)	39 22 53.33	76 17 29.76	1,892.7

From bench mark 90 to bench mark 89 (checked spur).

Wright Creek, about 0.5 mile east of mouth of, 240 feet east of marsh, in woods, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 89, 1918, 5." Elevation, 4.974 feet. (Distance from station 90)	39 22 35.07	76 17 51.22	1,527.7

GUNPOWDER QUADRANGLE—Continued.

From bench mark 25 via bench marks 59, 58, and 57 to bench mark 56.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Edgewood, 0.3 mile southwest of, on reservation line, just inside of heavy wire fence, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 59, 1918, 43." Elevation, 43.358 feet. (Distance from station 25)	39	24	46.77	76	17	54.45	1,641.1
Edgewood, 0.7 mile southwest of, on reservation line, just inside of heavy wire fence, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 58, 1918, 33." Elevation, 33.323 feet. (Distance from station 59)	39	24	38.86	76	18	13.21	1,676.4
Edgewood, 1 mile southwest of, on reservation line, just inside of heavy wire fence, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 57, 1918, 33." Elevation, 32.705 feet. (Distance from station 58)	39	24	28.77	76	18	37.13	2,137.1

From bench mark 2 to bench mark 1.

Magnolia, 0.5 mile southwest of, 900 feet west of road to Piney Point, 55 feet south of south rail, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 1, 1918, 30." Elevation, 30.314 feet. (Distance from station 2)	39	23	53.97	76	20	03.27	2,526.4

Magnetic declination for quadrangle, 7.0° W.

From Piney Point (2) northeast, south, and west along highways to Maxwell Point.

Piney Point (2) triangulation station of U. S. Coast and Geodetic Survey, on north side of Gunpowder River, 0.5 mile east of the railroad bridge. A chestnut tree 3 feet in diameter stands 17 feet 7 inches from the signal and close to the edge of the bluff, which is about 10 feet high. The chimney of Litchfield's house bears about N. 0.75° E. and is 142.5 feet distant. Point is marked by two 4-inch drain tiles planted vertically, one above the other, the upper end about 8 inches below the surface of the ground. In this a pine stub was placed, the center of the tile and station being marked on it by a large wire nail	39	23	18.58	76	20	00.76	.....

TRIANGULATION STATIONS.

LEGO POINT (2), HARFORD COUNTY, MD.

On marshy point of same name at southern entrance to Bush River, 24 feet from shore line northeast, and 21 feet from shore line south.

Marked by two 4-inch drain tiles planted vertically, the upper end about 8 inches below the surface of the ground. In this a pine stub was placed, the center of the tile and station being marked on it by a large wire nail.

[Latitude 39° 20′ 11.24″. Longitude 76° 15′ 14.67″.]

MAXWELL POINT (2), HARFORD COUNTY, MD.

On Maxwell Point, east side of Gunpowder River. The land is about 10 feet high at the station and is protected along the shore by a wall and loose blocks of stone. From the station to the wall at the point the distance is 30 feet, on the northwest 30 feet, and on the southwest 20 feet. The point is marked by two 4-inch drain tiles planted vertically one above the other, the upper end about 8 inches below the surface of the ground. In this a pine stub was placed, the center of the tile and station being marked on it by a large wire nail.

[Latitude 39° 21′ 25.07″. Longitude 76° 19′ 22.58″.]

MARYLAND-WEST VIRGINIA.

TRIANGULATION STATIONS.

Davis, Elk Garden, and Keyser quadrangles.

GARRETT COUNTY, MARYLAND; GRANT, PARSONS, MINERAL, AND TUCKER COUNTIES, WEST VIRGINIA.

Triangulation by J. B. Metcalfe, jr., in the spring of 1916, based on Pinnacle-Nat, and checked on Limestone, Shaver, and Backbone. Twelve new stations were occupied, and five old stations were reoccupied, all on North American datum.

For additional positions in West Virginia see U. S. Geological Survey Bulletins 122, 181, 216, 245, 310, 440, 496, 551, 644–R, and Twentieth Annual Report, Part I, also U. S. Coast and Geodetic Survey Special Publication No. 30.

CONNEWAY, GARRETT COUNTY, MD.

On Backbone Ridge, 0.25 mile east of the Old Northwestern pike crossing, on J. M. Conneway's land, 0.25 mile northwest of his residence. The point was heavily timbered, so the timber was cleared on the south and east slopes. The instrument was elevated 35 feet.

Station mark: Bronze tablet set in large flat rock.

Reference mark: Signal tree, which is under center of instrument.

[Latitude 39° 18′ 16.12″. Longitude 79° 24′ 46.95″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bearden	2 58 42.67	182 58 12.41	4.3452079	13.758
Pinnacle	253 14 26.01	73 27 08.61	4.4780913	18.683
Keystone	282 16 47.97	102 26 01.55	4.3314605	13.329
Snow	333 25 38.80	153 29 04.63	4.2421769	10.852
Brown	347 40 31.79	167 42 02.36	4.2070180	10.008
Schell	263 46 30.77	83 53 01.77	4.17237	9.242

BACKBONE, TUCKER COUNTY, W. VA.

On south end of Backbone Ridge, about 2 miles north of Hendricks post office. From Hendricks a private road leads to Albert Fansler's house, about 0.5 mile distant, and thence about 1.5 miles to signal, which is on a bare rocky ledge.

Station mark: Bronze tablet cemented in solid ledge.

[Latitude 39° 06′ 23.16″ (L), 39° 06′ 23.89″ (M). Longitude 79° 36′ 05.85″ (L), 79° 36′ 07.335″ (M).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Shaver (L)	28 40 14.67	208 38 57.50	3.78782	.....
Limestone (L)	156 53 38.55	336 51 05.20	4.17085	.....
Shaver (M)	28 40 58.06	208 39 40.89	3.7876164	3.818
Limestone (M)	156 54 12.29	336 51 39.23	4.1707878	9.207
Pine (M)	210 33 04.07	30 34 14.54	3.7223066	3.278
Harmon (M)	289 05 31.96	109 13 54.22	4.3068805	12.596
Pointy (M)	313 35 29.08	133 39 23.06	4.0909388	7.661

L indicates positions obtained by W. H. Lovell in 1905; M indicates positions obtained by J. B. Metcalfe, jr., in 1916.

BEARDEN, TUCKER COUNTY, W. VA.

On Bearden Knob, about 3.5 miles southeast of Davis. Can best be reached from the Davis-Canaan Valley road. The point lies about 0.25 mile north of where this road crosses the divide.

Station mark: Copper bolt set in top of stone 5 by 8 by 30 inches, set 24 inches in ground.

Signals: Targets nailed in old hemlock snag. Instrument over center.

Reference mark: Signal, distance, 20.5 feet; true azimuth, 277° 30′ 26″.

[Latitude 39° 06′ 19.09″. Longitude 79° 25′ 34.83″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Pointy	36	56	47.74	216	54	03.08	4.0193268	6.496
Pine	110	36	01.89	290	30	33.23	4.1258502	8.302
Conneway	182	58	12.41	2	58	42.67	4.3452079	13.758
Brown	215	44	01.90	35	46	02.49	3.8951578	4.881
Snow	234	04	46.84	54	08	42.45	4.0440251	6.877
Harmon	328	45	33.09	148	47	16.52	3.8812672	4.727

BROWN, TUCKER COUNTY, W. VA.

On the highest point of Browns Mountain, a bald rocky point with scattering dead trees, about 5 miles east of Davis. Can be best reached by traversing the old Beaver Creek railroad for about 3 miles out of Davis. Turn up the first old switch to the right after the railroad crosses Beaver Creek and follow this old tram road for about 2.5 miles, and then the point will show on the right in a northeast direction, distant about 0.5 mile. It is 0.25 mile north of the divide between Yellow Creek and Little Blackwater.

Station mark: Bronze tablet set in ledge of sandstone rock. The signals are white targets nailed in small hemlock snag, with a small green hemlock tree nailed in top of same.

Reference mark: Signal, distance, 10.5 feet; true azimuth, 241° 21′.

[Latitude 39° 09′ 45.82″. Longitude 79° 22′ 23.75″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Harmon	2	53	10.01	182	52	52.99	4.1104924	8.014
Bearden	35	46	02.49	215	44	01.90	3.8951578	4.881
Pine	84	26	12.01	264	18	42.69	4.2349338	10.673
Conneway	167	42	02.36	347	40	31.79	4.2070180	10.008
Snow	268	30	47.14	88	32	42.22	3.6411034	2.719

HARMON, TUCKER COUNTY, W. VA.

On the west side of the Alleghany Front, overlooking Canaan Valley, about 10 miles southeast of Davis and 0.75 mile east of Jason Harmon's residence. Can best be reached by riding to field 0.4 mile east of Mr. Harmon's residence, thence walking directly up the mountainside to station.

Station mark: Bronze tablet set in sandstone boulder.

Signal: A small hemlock tree (braced) with white targets. Instrument over center.

Reference mark: Signal tree, distance, 8 feet; true azimuth, 26° 21′.

[Latitude 39° 02′ 48.12″. Longitude 79° 22′ 50.75″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Pointy	79	46	23.40	259	41	55.50	4.0168692	6.460
Pine	124	17	14.88	304	10	02.95	4.2989930	12.369
Bearden	148	47	16.52	328	45	33.09	3.8812672	4.727
Brown	182	52	52.99	02	53	10.01	4.1104924	8.014
Snow	201	08	02.30	21	10	14.27	4.1440065	8.657
Backbone	109	13	54.22	289	05	31.96	4.3068805	12.596

KEYSTONE, GRANT COUNTY, W. VA.

On Keystone ridge on the Alleghany Front, about 6 miles south of Hartmansville, on what is known as the old Karscadden place. The large timber on the point was cut off, except one large umbrella pine, which was used as a signal tree. The instrument was elevated 15 feet in order to see over the small timber.

Station mark: Bronze tablet set in top of sandstone rock 8 by 12 by 30 inches set 25 inches in ground.

Reference mark: Signal tree, distance, 7 feet; true azimuth, 312° 12′.

[Latitude 39° 15′ 47.25″. Longitude 70° 10′ 12.64.″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Snow	50 05 19.72	229 59 32.71	4.2350200	10.675
Conneway	102 26 01.55	282 16 47.97	4.3314605	13.329
Schell	135 08 44.92	315 06 08.65	3.94117	5.427
Pinnacle	210 45 54.07	30 49 22.30	4.1868177	9.554
Twin	284 48 21.53	104 55 13.36	4.2082082	10.036

LIMESTONE, PRESTON COUNTY, W. VA.

On high point on Limestone Ridge, 7 miles north of St. George, on land owned by Thomas Fansler. Point is 0.25 mile south of Thomas Fansler's house and 500 feet west of county road.

Station mark: Center of lone maple signal tree.

[Latitude 39° 13′ 45.1″ (T), 39° 13′ 45.81″ (M). Longitude 79° 40′ 08.3″ (T), 79° 40′ 09.68″ (M).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Belington (T)	39 00 07	218 52 15	4.45623	.....
Laurel (T)	60 43 55	240 37 54	4.19614	.....
Funk (T)	133 10 18	313 06 39	4.05638	.....
Rock (T)	166 21 04	346 18 05	4.45809	.....
Brown (T)	184 48 30	4 49 07	4.25191	.....
Shaver (T)	351 22 01	171 23 16	4.28398	.....
Pine (M)	316 53 09.28	136 56 52.98	4.0947814	7.729
Backbone (M)	336 51 39.23	156 54 12.29	4.1707878	9.207
Shaver (M)	351 22 24.05	171 23 39.76	4.2838730	11.946

T indicates positions obtained by Sledge Tatum in 1902; M indicates positions obtained by J. B. Metcalfe, jr., in 1916.

MICHAEL, MINERAL-HAMPSHIRE COUNTIES, W. VA.

On a high knob 8 miles south of Romney. In the Michael Brothers' orchard, about 1 mile south of the old Braddock road crossing.

Station mark: Rock 10 by 8 by 30 inches, set 24 inches in the ground, with U+S cut in top.

Signal: A small hemlock tree braced with white targets nailed in it.

Reference mark: Signal, distance, 7 feet; true azimuth, 221° 49′.

[Latitude 39° 25′ 20.54″. Longitude 78° 47′ 25.62″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Twin	38 15 42.04	218 06 08.28	4.4433612	17.247
Twig	92 54 16.73	266 47 54.88	4.1585666	8.952
Nat	354 45 17.37	174 46 05.08	4.2954710	12.269

NAT, HAMPSHIRE COUNTY, W. VA.

On the highest part of Nathaniel Mountain, about 10 miles south of Romney. This is an old station. The summit was cleared of timber in 1897, except one large tree, which was trimmed and used as a signal.

Station mark: Signal tree of 1897, not found in 1916.

Reference mark: Copper bolt cemented in rock, distance from station, 3.7 feet; azimuth from signal tree, 212° 09′. (Not found in 1916.)

New description, 1916.

Station mark: 10 by 14 by 24 inch stone set in ground with U+S chiseled in top.

Reference mark: 10-inch signal tree, with a triangle cut on east side with spike driven in center. Distance, 22.3 feet; true azimuth, 124° 30′.

[Latitude 39° 14′ 42.93″. Longitude 78° 46′ 10.35″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Twin (M)	83 34 38.25	263 26 17.74	4.2810550	11.869
Pinnacle (M)	119 45 11.13	299 33 25.53	4.4871668	19.077
Twig (M)	139 24 19.44	319 17 10.60	4.3957705	15.457
Michael (M)	174 46 05.08	354 45 17.37	4.2954710	12.269
Pinnacle (H)	119 45 11.13	299 33 25.53	4.4871668	.....
Dan (H)	163 35 32.50	343 30 39.72	4.5906124	.....
Warrior (H)	197 02 07.44	17 07 47.97	4.6399604	.....

H indicates positions obtained by G. T. Hawkins in 1897–98; M indicates positions obtained by J. B. Metcalfe, jr., in 1916.

PINE, TUCKER COUNTY, W. VA.

On the Backbone Ridge, about 5 miles west of Thomas. Can best be reached by following the Sugar Land road to top of ridge and thence trail south 0.25 mile to signal. The point was heavily timbered, so lines of sight were cut through to observed points. One hemlock tree 16 inches in diameter was left standing for a signal tree. The instrument was elevated 20 feet and was placed over center.

Station mark: Bronze tablet set in boulder.

Reference mark: Signal tree 2 feet distant; true azimuth, 237° 01′.

[Latitude 39° 08′ 51.22″. Longitude 79° 34′ 15.66″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Backbone	30 33 14.54	210 33 04.07	3.7223066	3.278
Limestone	136 56 52.98	316 53 09.28	4.0947814	7.729
Brown	264 18 42.69	84 26 12.01	4.2349338	10.673
Bearden	290 30 33.23	110 36 01.89	4.1258502	8.302
Harmon	304 10 02.95	124 17 14.88	4.2989930	12.369
Pointy	334 25 36.57	154 28 20.23	4.1602844	8.987

PINNACLE, MINERAL COUNTY, W. VA.

On high point of mountain about 12 miles south of Keyser. The station is on a rock that rises above the timber.

A house (fire station) has been built over this point. Dimensions of house are 10 by 10 by 12 feet. The signal was placed on top of roof and over center.

Station mark: (Set in 1897) bronze tablet cemented in solid rock.

[Latitude 39° 22′ 55.53″. Longitude 79° 04′ 44.04″.]

PINNACLE, MINERAL COUNTY, W. VA.—Continued.

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Keystone (M)	30	49	22.30	210	45	54.07	4.1868177	9.554
Schell (M)	63	28	03.13	243	21	51.75	4.19542	9.745
Conneway (M)	73	27	08.61	253	14	26.01	4.4780913	18.683
Twig (M)	250	34	10.32	70	38	47.73	4.0448137	6.889
Nat (M)	299	33	25.53	119	45	11.13	4.4871668	19.077
Twin (M)	335	58	23.61	156	01	47.82	4.2785746	11.801
High Rock (H)	175	02	27.33	355	01	45.68	4.2578313	11.25
Dan (H)	215	03	45.41	35	10	40.34	4.4331252	16.85
Warrior (H)	235	54	39.53	56	12	08.98	4.6768319	29.5

H indicates positions obtained by G. T. Hawkins in 1897–98; M indicates positions obtained by J. B. Metcalfe, jr., in 1916.

POINTY, TUCKER COUNTY, W. VA.

On a high bald rocky point southwest of Canaan Valley. The best way to reach the point is to ride to Ash Nives house, thence by trail past Chimney Rock out ridge 1 mile to signal. All the country to the south and southwest can be seen. Instrument was over center.

Signal: A small hemlock tree nailed in top of an old snag.

Station mark: Bronze tablet set in ledge of sandstone rock.

Reference mark: A hole drilled in large flat rock, 40 feet north of tablet, also signal distance, 61 feet ; true azimuth, 194° 00′ 56″.

[Latitude 39° 01′ 48.05″. Longitude 79° 29′ 56.09″.]

To station—	Azimuth.			Black azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Shaver	104	47	41.91	284	42	30.94	4.0890744	7.628
Backbone	133	39	23.06	313	35	29.08	4.0909388	7.661
Pine	154	28	20.23	334	25	36.57	4.1602844	8.987
Bearden	216	54	03.08	36	56	47.74	4.0193268	6.496
Harmon	259	41	55.50	79	46	23.40	4.0168692	6.460

SCHELL, MINERAL COUNTY, W. VA.

A secondary station located about 3 miles south of Schell railroad station on the Western Maryland Railway, about 0.25 mile northwest of J. H. Roderick's house. The point is 12 feet east of a north and south fence and about 30 yards from the Mineral and Grant county line.

Signal: A 16-inch hickory tree standing in the field.

Station mark: A cross cut in the top of a sandstone rock 7 by 10 by 30 inches, set 27 inches in the ground.

Reference mark: Signal tree, distance, 8 feet; true azimuth, 243° 06′.

[Latitude 39° 19′ 07.96″. Longitude 79° 14′ 29.77″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Snow	22	07	55.18	202	04	48.60	4.26927	11.551
Conneway	83	53	1.77	263	46	30.77	4.17237	9.242
Pinnacle	243	21	51.75	63	28	03.13	4.19542	9.745
Keystone	315	06	08.65	135	08	44.92	3.94117	5.427

SHAVER, TUCKER COUNTY, W. VA.

A high rocky mountain 2 miles south of Hendricks. Can best be reached by crossing river at Hendricks, thence going by trail south about 1 mile, thence over rough, rocky mountain side 1 mile to signal.

Station mark: An aluminum bolt set in solid rock on highest bald summit.

[Latitude 39° 03′ 28.6″ (T), 39° 03′ 29.42″ (M). Longitude 79° 38′ 08.30″ (T), 79° 38′ 09.75″ (M).]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Laurel (T)	124	21	26	304	14	10	4.30300	.....
Limestone (T)	171	23	16	351	22	01	4.28398	.....
Limestone (M)	171	23	39.76	351	22	24.05	4.2838730	11.946
Backbone (M)	208	39	40.89	28	40	58.06	3.7876164	3.810
Pointy (M)	284	42	30.94	104	47	41.91	4.0890744	7.628

T indicates positions obtained by Sledge Tatum in 1902; M indicates positions obtained by J. B. Metcalfe, jr., in 1916.

SNOW, ON GRANT-TUCKER COUNTY LINE, W. VA.

On a high rocky point on the divide between Little Blackwater, Beaver Creek, and Stony River. Can best be reached by following the Dobbin log road from Dobbin to the Canaan water tank (about 10 miles), thence going east uphill ⅓ of a mile to the point.

Station mark: Bronze tablet set in ledge of rock.

Signal: A small hemlock tree braced over center with white targets.

[Latitude 39° 09′ 49.46″. Longitude 79° 19′ 21.53.″]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Harmon	21	10	14.27	201	08	02.30	4.1440065	8.657
Bearden	54	08	42.45	234	04	46.84	4.0440251	6.877
Brown	88	32	42.22	268	30	47.14	3.6411034	2.719
Conneway	153	29	04.63	333	25	38.80	4.2421769	10.852
Schell	202	04	48.60	22	07	55.18	4.26927	11.551
Keystone	229	59	32.71	50	05	19.72	4.2350200	10.675
Twin	256	26	10.69	76	28	48.96	4.4713915	18.397

TWIG, MINERAL COUNTY, W. VA.

On the Knobby Mountain Range, in the highest point of the Twig orchard, about 4.5 miles east of Keyser.

Station mark: Bronze tablet set in limestone rock 8 by 16 by 30 inches, set 24 inches in the ground, 2 feet from a peach tree. The instrument was elevated 15 feet in order to see over the peach tree.

Signal: A pine tree 25 feet high was trimmed, except the top. Distance from mark to signal, 4.5 feet; true azimuth, 358° 34′.

[Latitude 39° 24′ 54.90″. Longitude 78° 57′ 26.98″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log meters.*	*Miles.*
Twin	7	27	07.20	187	25	54.52	4.3265464	13.179
Pinnacle	70	38	47.73	250	34	10.32	4.0448137	6.889
Michael	266	47	54.88	86	54	16.73	4.1585666	8.952
Nat	319	17	10.60	139	24	19.44	4.3957705	15.457

TWIN, ON GRANT-HARDY COUNTY LINE, W. VA.

On the highest point of Twin Mountain, 0.25 mile east of Twin Mountain railroad station.

Signal: An 18-inch hickory tree. The signal tree has a triangle cut on the south side, and a 60-penny spike is driven in the center of the triangle. The instrument was elevated 25 feet in order to see Michael station.

Station mark: A 4 by 8 by 36-inch limestone rock set 30 inches in the ground with U+S chiseled in top.

Reference mark: Signal tree, distance, 4 feet; true azimuth, 300° 30′.

[Latitude 39° 13′ 32.90″. Longitude 78° 59′ 21.66″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Snow	76	38	48.96	256	26	10.69	4.4713915	18.397
Keystone	104	55	13.36	284	48	21.53	4.2082082	10.036
Pinnacle	156	01	47.82	335	58	23.61	4.2785746	11.801
Twig	187	25	54.52	7	27	07.20	4.3265464	13.179
Michael	218	06	08.28	38	13	42.04	4.4433612	17.247
Nat	263	26	17.74	83	34	38.25	4.2810550	11.869

FLORIDA.

PRIMARY TRAVERSE.

Ates Creek, Boulogne, Cambon, Fernandina, Green Cove Springs, Hilliard, Jacksonville, Lake Butler, Lawtey, Macclenny, Mayport, Middleburg, Moniac, Orange Park, Palm Valley, St. Augustine, St. Marys, and Sanderson quadrangles.

BAKER, BRADFORD, CLAY, DUVAL, NASSAU, AND ST. JOHN COUNTIES.

The following geographic positions, on North American datum, were determined in 1917 and are based on Coast and Geodetic Survey triangulation stations in this area.

The traverse was done as follows: In Ates Creek, Green Cove Springs, Middleburg, Palm Valley, and St. Augustine quadrangles by C. B. Kendall; in Lake Butler, Lawtey, Macclenny, Moniac, and Sanderson quadrangles by H. S. Senseney; in Boulogne quadrangle by E. L. McNair and Senseney; in Cambon quadrangle by Kendall, McNair, and Senseney; in Hilliard quadrangle by Senseney, McNair, and J. B. Leavitt; in Jacksonville quadrangle by McNair, Kendall, and Leavitt; in Mayport quadrangle by Kendall and Leavitt; in Orange Park quadrangle by Kendall and Leavitt; and in St. Marys quadrangle by Leavitt, Kendall, and Senseney.

ATES CREEK QUADRANGLE.

Along highways near north border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T. 6 S., R. 25 E., quarter corner between secs. 12 and 13, 60 feet east of bridge over small stream; stake marked "¼ S. 13" on south side and "¼ S. 12" on north side	29	58	58.7	81	45	23.6	.....
T. 6 S., R. 25 E., corner of secs. 11, 12, 13, and 14, 50 feet northeast of northeast corner of garden fence, center of road, opposite stake on north side	29	58	58.2	81	45	53.6	2,639
Crossroads, 160 feet west of, 510 feet east of T road north, on north side of road; pine stake	29	58	57.9	81	46	54.8	5,390
Dowling & Shands lumber railroad crossing, center of track, 370 feet east of pole bridge over small stream	29	58	57.1	81	47	26.1	2,751
Southern Cattle Feed Company's hotel, The Longbranch, center of road opposite, 340 feet east of T road north through gate	29	58	56.2	81	48	42.8	6,750
T road south through gate; center of road opposite	29	58	55.5	81	49	43.3	5,320
Southern Cattle Feed Company's wire fence; center of road opposite northwest corner (may be section corner)	29	58	55.1	81	50	22.7	3,470
Road forks east and northeast, 0.5 mile east of Black Creek bridge, 12 feet south to telephone pole, 15 feet north to leaning oak, 790 feet east of plank bridge over small stream	29	58	54.4	81	50	42.2	1,716
Black Creek; center of bridge over	29	58	41.81	81	51	07.73	2,583
T road south to Waller post office 0.5 mile distant, main road makes slight bend to north, and three fences corner here, possibly section corner	29	58	39.8	81	52	36.3	7,794
Three-pronged live-oak tree, on south edge of road, at small stream crossing	29	58	45.9	81	53	27.4	4,540
Camphor Farm store and headquarters, 0.2 mile north of, at intersection of Green Cove Spring-Starke road with Jacksonville-Melrose road, 35 feet north by 20 feet east of intersection of crossroads; iron post stamped "Prim. Trav. Sta. No. 13, K 1917"; azimuth to top of cross on church 800 feet distant, 324° 38′ 45″	29	58	39.9	81	54	08.6	3,677
Cypress Pond, forks of road at north end, roads northwest and southwest	29	58	54.4	81	56	04.0	10,255
Bull Creek, center of ford, 30 feet west to pine stump	29	59	18.2	81	56	46.7	4,458
Wire gate across road	29	59	18.0	81	56	55.0	726

ATES CREEK QUADRANGLE—Continued.

Along highways near north border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks, roads south and southeast, 200 feet southeast of corner of rail fence	29 59 32.3	81 57 43.6	4,519
T road north to Middleburg, 2.5 miles east of Kingsley Lake, 10 feet south to signboard, 20 feet north to bridge	29 59 45.4	81 58 04.9	2,290
Plank bridge over small stream	29 59 14.5	81 59 07.2	6,311
Tie point on Starke quadrangle, Kingsley Lake Prim. Trav. Sta. No. 67, 1911	29 58 45.6	82 00 20.1	7,045

Magnetic declination near north border of quadrangle, 0.6° W.

BOULOGNE QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L. McNair.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Public road crossing	30 45 40.2	81 58 54.3	.....
Boulogne flag station, 50 feet N. 40° W. of, 24 feet S. 57° W. from nearest rail, 173 feet S. 30° E. from road crossing, 2 feet east of fence line; Coast and Geodetic Survey bench mark stamped "U. S. C. & G. S. B. M. P$_7$"; azimuth to top of semaphore post 6065, 317° 55′ 50″	30 46 26.6	81 59 42.1	6,276

Along highways near south border of quadrangle. (By H. S. Senseney.)

Boulogne; Coast and Geodetic Survey bench mark P$_7$ (previously listed)	30 46 26.6	81 59 42.1	.....
Road forks at signboard painted "Boulogne, ¼ mile"	30 46 23.2	81 58 53.3	4,272
Road forks, three fence posts south	30 46 35.9	81 58 22.7	2,960
Crossroads, blazed pine north	30 46 41.0	81 57 36.9	4,032
Crossroads at signboard painted "To Highway Park ferry"	30 46 48.4	81 57 11.6	2,327
Crossroads, blazed oak northwest	30 46 43.6	81 56 26.0	4,013
Crossroads	30 46 54.9	81 55 30.8	4,949
Road forks at signboard painted "Boulogne—Traders Hill"	30 47 03.7	81 54 46.6	3,955
Road forks at signboard painted "Boulogne—Traders Hill"	30 47 34.8	81 53 22.0	8,018
Railroad crossing	30 47 26.6	81 52 19.2	5,539
Foot bridge, at west end of; road forks	30 46 59.5	81 51 05.6	6,977
T road west at signboard painted "Hilliard, 9 miles"	30 47 00.4	81 50 27.9	3,294
Kings Ferry, at northwest corner of crossroads at H. H. Haddock's store; iron post stamped "Prim. Trav. Sta. No. 11, S. 1917"; azimuth to peak of W. J. Carleton's barn, 78° 54′ 45″	30 47 04.00	81 50 20.24	762
Crossroads, blazed pine west of	30 45 56.2	81 48 57.8	9,931
Crossroads	30 45 17.8	81 47 58.7	6,515
Crossroads, vacant house west of; blazed pine north	30 45 07.8	81 47 42.4	1,734

Magnetic declination along south border of quadrangle, 1.2° E.

CAMBON QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L. McNair.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing; center of doble track roadbed	30 24 31.3	81 45 11.6	(2,410)
Dinsmore station, 1,050 feet southeast of; road crossing	30 25 39.2	81 45 50.7	7,670
Dinsmore station, 750 feet northwest of, 90 feet southwest of public-road crossing, 40 feet from track, on bank; iron post stamped "Prim. Trav. Sta. No. 1, 1917, Mac"; azimuth to semaphore post, 154° 56′ 25″	30 25 55.2	81 46 00.5	1,830
Dinsmore station, 0.80 mile northwest of, at spur line to sawmill, at switchstand; center of double track	30 26 31.6	81 46 20.9	4,087
Road crossing; center of double track	30 27 12.8	81 46 44.7	4,660
Public-road crossing; center of double track	30 27 45.6	81 47 03.7	3,705
Private-road crossing, between tracks	30 29 26.9	81 48 00.6	11,379

Magnetic declination for line, 0° 55′ E.

CAMBON QUADRANGLE—Continued.

Along Seaboard Air Line Ry. from Baldwin to Crawford. (By H. S. Senseney.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Baldwin triangulation station of U. S. Coast and Geodetic Survey at Baldwin Junction, on Florida Central & Peninsular R. R., near southeast corner of reclaimed land on which office building stands. Station is 33 feet 2.5 inches west of east rail of north-and-south line, 206 feet 8 inches south of south rail of east-and-west line. Marked by 8-inch terra-cotta pipe set in ground and projecting a few inches; pipe is filled with cement mortar in which is embedded a ½-inch iron rod to mark center	30 17 59.10	81 58 31.81	.....
Negro church, where footpath crosses railroad at	30 17 57.8	81 58 59.5	2,430
Road crossing	30 17 52.2	81 59 51.3	4,575
Baldwin, crossing of Seaboard Air Line and Atlantic Coast Line railroads	30 18 37.1	81 58 16.8	.....
Road crossing	30 19 08.9	81 58 04.6	3,385
Road crossing, 180 feet south, in platform	30 21 14.1	81 57 16.5	13,330
Cay Town, road crossing at	30 22 27.9	81 56 48 1	7,860
Bryceville, road crossing near sawmill	30 23 04.6	81 56 34.0	3,905
Bryceville, at southwest corner of M. E. Church; iron post stamped "Prim. Trav. Sta. No. 2, S 1917"	30 23 08.6	81 56 30.3	520
Road crossing	30 23 29.6	81 56 24.4	2,181
Inglehorne, road crossing at	30 25 08.0	81 55 46.4	10,485
Road crossing	30 26 09.3	81 55 22.8	6,530
Verdie, road crossing at	30 26 29.7	81 55 15.0	2,170
Road crossing, 165 feet north of milepost 35	30 28 11.4	81 54 35.7	10,825
Milepost 34	30 28 54.7	81 54 06.2	5,090
Milepost 33	30 29 37.2	81 53 31.0	5,280

On highway west of Bryceville.

Bryceville, road crossing near sawmill (previously described)	30 23 04.6	81 56 34.0	.....
Small creek	30 23 11.2	81 56 42.4	998
Small creek	30 23 49.6	81 58 51.7	11,963

Magnetic declination near Bryceville, 1° 19′ E.

From Baldwin east along Seaboard Air Line Ry. in south part of quadrangle. (By C. B. Kendall.)

Baldwin triangulation station of U. S. Coast and Geodetic Survey (already described)	30 17 59.10	81 58 31.81	.....
Road crossing, center of track	30 18 05.8	81 57 46.1	4,061
Milepost J 17; center of track opposite	30 18 13.5	81 56 34.2	6,350
Saucer siding, spur switch, road crossing	30 18 17.5	81 55 56.7	3,320
Milepost J 16; center of track opposite	30 18 19.9	81 55 34.2	1,980
Milepost J 15	30 18 26.3	81 54 34.3	5,291
Otis station, road crossing at, 20 feet southwest of platform and 220 feet west of signboard	30 18 31.8	81 53 43.0	4,540
Milepost J 13; center of track opposite	30 18 39.0	81 52 34.6	6,040
Halsema, 340 feet east of, at second-class road crossing; center of track	30 18 41.7	81 52 07.5	2,390
Road crossing, center of track, 550 feet west of milepost J 12	30 18 44.5	81 51 40.8	2,351
McGisto Creek, on trestle over center of creek	30 18 46.5	81 51 21.8	1,686
White House railroad station, 75 feet southwest of, 50 feet east of post office, at fence corner; iron post stamped "Prim. Trav. Sta. No. 14K"; U. S. C. & G. S. bench-mark tablet in concrete post is 33.4 feet distant, in azimuth 173° 06′	30 18 50.3	81 50 40.7	3,616
Milepost J 10; center of track opposite	30 18 57.8	81 49 35.0	5,817
Milepost J 9; center of track opposite	30 19 04.1	81 48 35.2	5,280
Milepost J 8; center of track opposite	30 19 10.5	81 47 35.2	5,300
Marietta, 140 feet east of station, at road crossing; center of main track	30 19 14.0	81 47 02.1	2,921
Milepost J 7; center of track opposite	30 19 16.9	81 46 35.3	2,370
Road crossing	30 19 20.6	81 46 00.5	3,070
Milepost J 6; center of track opposite	30 19 23.2	81 45 35.4	2,220

From White House railroad station south along highways to south border of quadrangle. (By C. B. Kendall.)

White House railroad station, 75 feet southwest of, 50 feet due east of Coast Survey bench mark; iron post stamped "Prim. Trav. Sta. No. 14, K 1917"	30 18 50.3	81 50 40.7	.....
White House station, 0.25 mile west of, center of track at public road crossing, is on line between Rs. 24 and 25 E.; section corner could not be located	30 18 49.3	81 50 55.5	1,297
McGirts Creek, center of bridge over	30 18 02.4	81 50 55.5	4,740

CAMBON QUADRANGLE—Continued.

From White House railroad station south along highways to south border of quadrangle—Con.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
McGirts Creek, 1.20 miles south of, at southwest corner of small vineyard; center of north and south road at T road east	30 16 59.3	81 50 55.7	6,370
McGirts Creek bridge, 2 miles south of, 15 feet north and 20 feet west of three corners at T road north; stake set temporarily for iron post to be stamped "Prim. Trav. Sta. No. 15, K 1917"	30 16 20.4	81 50 56.3	3,933
Milepost J 14; center of road opposite	30 15 44.1	81 51 50.2	5,981
Milepost J 15; center of road opposite	30 15 13.5	81 52 37.3	5,161
Milepost J 15; second-class fork southeast	30 15 10.2	81 52 43.5	640

Magnetic declination for south part of quadrangle, 0.6° W.

FERNANDINA QUADRANGLE.

Along Seaboard Air Line Ry. near Fernandina. (By C. B. Kendall.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Shell road crossing, 350 feet southwest of milepost 5	30 37 17.5	81 29 54.2	.....
Amelia River bridge, center of draw span	30 37 43.0	81 29 05.3	4,989
Second-class road crossing at section house	30 37 55.6	81 28 01.6	5,708
Fernandina, 2 miles south of, shell road crossing	30 38 19.5	81 27 33.4	3,451
Fernandina, street crossing at south edge of	30 39 19.7	81 27 43.1	6,140
Fernandina, longitude station of U. S. Coast and Geodetic Survey, on south side of Center Street between Fourth and Fifth streets, west side of courthouse, in courthouse grounds, about 15 meters south of Center Street curb and about 9 meters west of west side of courthouse. Marked by concrete pier 19 by 34 inches, 2 feet in ground, 3 feet above. Lettered "U. S. C. & G. S. 07" on pier. Center of pier 11.90 meters from northwest corner of courthouse, 4 feet above ground, 23.29 meters from southwest corner of courthouse, 4 feet above ground, 4.29 meters south and 17.50 meters west of courthouse spire	30 40 14.14	81 27 43.02	.....
Fernandina courthouse spire, U. S. Coast and Geodetic Survey triangulation station	30 40 14.28	81 27 42.35	.....
Fernandina, 7 feet west of center of Coast and Geodetic Survey longitude pier; iron post stamped "Prim. Trav. Sta. No. 21, K 1917"	30 40 14.13	81 27 43.10	.....

GREEN COVE SPRINGS QUADRANGLE.

Along highways near north border of quadrangle. (By C. B. Kendall.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Green Cove Springs, Prim. Trav. Sta. No. 10 K (see following list)	29 59 28.2	81 41 06.7	.....
Four corners, 0.8 mile west of Green Cove Springs courthouse, 25 feet southwest to wire fence, 30 feet southeast to mail box	29 59 08.6	81 41 47.1	4,073
Governors Creek, center of bridge over	29 59 02.1	81 42 11.0	2,200
Road forks west and southwest, 60 feet southwest to sign painted "Green Cove Springs 2.5 miles, Starke 30 miles, Sharon 7.5 miles"	29 59 01.3	81 43 00.8	4,380
T. 6 S., R. 26 E., quarter corner between secs. 8, 9, 16, and 17, 200 feet west of forks to southwest, 640 feet east of plank bridge over small stream, on south edge of road; stake	29 59 01.0	81 43 07.7	611
T. 6 S., R. 26 E., corner of secs. 7, 8, 17, and 18, T road north at corner of wire fence, in center of east-west road; stake	29 59 00.4	81 43 53.0	3,990
T. 6 S., R. 26 E., on north edge of road; stake marked "N. W. and N. E. corners of NW. sec. 18 and SE. and SW. cor. of SW. sec. 7"	29 58 59.6	81 44 38.5	4,001

Magnetic declination for north border of quadrangle, 1° W.

GREEN COVE SPRINGS QUADRANGLE—Continued.

Along Atlantic Coast Line R. R. between Green Cove Springs and Jacksonville. (By C. B. Kendall.)

Station.	Latitude.	Longitude.	Distance between station.
White triangulation station, U. S. Coast and Geodetic Survey, on the west bank of St. Johns River, on point of land about 1 mile southeast of Green Cove Springs. Marked underground by hole in brick, around which was placed cement. Over this was placed a 4-inch terra-cotta pipe set in cement and projecting 4 inches above the brick. Reference mark is a bottle 2 feet below surface of ground, and above it stands a concrete post 8 inches square, having two diagonal cross lines on its top. It is 15.31 meters from station in azimuth 355° 24′ 45″. There is an oak tree 10.70 meters from station in azimuth 266°. Two pine trees are at following distances and azimuths from station: 23 meters, 7°, and 30 meters, 96°. Reference mark is 18.42 meters from oak and 8 meters from first-mentioned pine	° ′ ″ 29 59 13.01	° ′ ″ 81 39 53.08	*Feet.*
Green Cove Springs, 0.9 mile southeast of, three corners at T road east through gate to Walkill farm	29 58 52.4	81 40 31.5	3,969
Green Cove Springs, Clay County courthouse, in line with west face and north of northwest corner of courthouse, just inside of iron fence, west of front gate; iron post stamped "Prim. Trav. Sta. No. 10, K 1917"	29 59 28.2	81 41 06.7	4,751
Green Cove Springs, 400 feet north of courthouse, city water tower; center of ball at top; azimuth from Prim. Trav. Sta. No. 10 K to center of ball, 186° 27′ 57″	29 59 31.7	81 41 06.2	356
Milepost J 29, 560 feet north of, public-road crossing; center of track	29 59 59.4	81 41 18.3	2,993

Magnetic declination for north border of quadrangle, 0.6° W.

HILLIARD QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L McNair.)

Station.	Latitude.	Longitude.	Distance between stations.
Ratliff flag station, 105 feet southwest of road crossing at, 3 feet east of fence post at gate, south side of private road; iron post stamped "Prim. Trav. Sta. No. 2, 1917 Mac;" reference azimuth to tip of metal ventilator on top of concrete railroad telephone booth, 615 feet distant, 167° 53′ 50″	° . ″ 30 30 07.2	° ′ ″ 81 48 23.3	*Feet.* 4,526
Public-road crossing, center of double track	30 31 21.6	81 49 01.6	8,228
Road crossing, between tracks	30 32 32.8	81 49 39.5	7,920
Callahan, intersection of Seaboard Air Line Ry. and southbound track of Atlantic Coast Line R. R.	30 33 38.2	81 50 11.6	7,182
Road crossing, between tracks	30 34 12.1	81 50 18.8	3,478
Milepost marked "Port Tampa 270," opposite, between tracks	30 35 23.3	81 51 01.2	8,099
Road crossing, between tracks	30 36 37.1	81 51 52.5	8,700
Dyal station, 125 feet south of road crossing at, S. 56° W., from center of double-track roadbed, inside fence, 2.5 feet from corner fence post; iron post stamped "Prim. Trav. Sta. No. 3, 1917, Mac;" azimuth to top of semaphore post 225 feet distant, 172° 44′ 00″	30 37 09.0	81 52 15.7	3,805
Milepost marked "Port Tampa 274," opposite, between tracks	30 38 22.4	81 53 05.9	8,612
Public-road crossing, between tracks	30 39 17.1	81 53 44.0	6,458
Public-road crossing, center of double-track roadbed	30 40 38.1	81 54 40.5	9,553
Hilliard station, 110 feet southwest of, 60 feet west of center of tracks, 15 feet south of roadway crossing tracks, 1 foot east of tall telephone pole; iron post stamped "Prim. Trav. Sta. No. 4, 1917, Mac;" azimuth to top of semaphore stand 6136 about 1,160 feet distant, 152° 25′ 00″	30 41 22.5	81 55 12.1	5,265
Road crossing, center of tracks	30 41 54.9	81 55 34.0	3,794
Milepost marked "Port Tampa 280," track opposite	30 42 50.9	81 56 13.1	6,610
Andrews flag station, 150 feet north of road crossing at, about 75 feet N. 46° E. from nearest rail at cattle guard, 16 feet S. 20° W. from corner fence post, concrete post with tablet in top stamped "U. S. C. & G. S. b. m. N_7;" azimuth to tip of semaphore post 6105, 323° 27′ 00″	30 43 50.9	81 57 01.5	7,385
Milepost marked "Port Tampa 282;" center of tracks opposite	30 44 13.8	81 57 26.2	3,157
Milepost marked "Port Tampa 283;" center of tracks opposite	30 44 53.0	81 58 06.2	5,280

Magnetic declination for line, 1° 09′ E.

HILLIARD QUADRANGLE—Continued.

Along Georgia Southern & Florida Ry. from St. George to Crawford. (By H. S. Senseney.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	30 31 17.9	81 59 36.0	
Road crossing 800 feet west of milepost 23–239	30 31 17.1	81 58 00.9	8,315
Road crossing	30 31 12.0	81 57 27.8	2,945
Road crossing 250 feet east of milepost 21–241	30 30 57.0	81 55 50.2	8,665
Road crossing	30 30 44.1	81 54 26.5	7,445
Crawford, 240 feet north of crossing of Georgia Southern & Florida and Seaboard Air Line railroads, at corner of garden fence; iron post stamped "Prim. Trav. Sta. No. 3 S, 1917"	30 30 31.2	81 52 49.2	8,609
Crawford, crossing of Georgia Southern & Florida and Seaboard Air Line railroads	30 30 28.9	81 52 48.2	245

Along Seaboard Air Line Ry. from Crawford to Callahan.

Road crossing	30 30 52.8	81 52 28.5	
Milepost 30, 110 feet north of, road crossing	30 31 45.6	81 51 44.8	6,570
Milepost 29	30 32 27.3	81 51 10.3	5,180
Road crossing	30 32 59.6	81 50 43.5	4,015
Callahan, crossing of Seaboard Air Line and Atlantic Coast Line railroads	30 33 38.2	81 50 11.6	4,791

Along highways near east border of quadrangle. (By H. S. Senseney.)

Center of bridge	30 43 07.7	81 46 38.3	
Lessie, at northeast corner of old store, road west	30 42 46.8	81 46 36.9	2,117
Road forks at signboard painted "Hilliard" west, blazed oak north	30 41 56.0	81 46 23.9	5,244
Evergreen, 2.50 miles west of, 100 feet east of road south to Italia, 6 feet west of blazed pine, south side of road; iron post stamped "Prim. Trav. Sta. No. 12, S. 1917;" azimuth to nail in root of blazed pine tree 300 feet east and 20 feet north of road, 252° 13′ 50″	30 41 56.7	81 46 03.3	1,803
Road forks, two blazed pines south and burned stump north	30 41 16.8	81 45 24.5	5,254
Road forks, blazed pine west	30 39 57.7	81 45 21.1	8,009

Along Seaboard Air Line Ry.

Logging-road crossing	30 36 07.1	81 45 26.9	
Road crossing	30 35 46.7	81 46 24.8	5,465
Road crossing, gate south	30 35 40.0	81 46 44.0	1,810
Road crossing	30 35 26.6	81 47 21.8	3,570
Road crossing, near switch to sawmill	30 35 14.0	81 47 57.6	3,379
Road crossing, house north, 700 feet northeast of milepost 25	30 35 03.8	81 48 26.4	2,719
Road crossing	30 34 51.6	81 49 01.2	3,276
Callahan, east of water tower, road crossing	30 33 55.6	81 49 57.2	7,476
Callahan, intersection of Seaboard Air Line and south-bound track of Atlantic Coast Line railroads	30 33 38.20	81 50 11.63	2,168

Along highways in northwest quarter of quadrangle.

Prim. Trav. Sta. No. 4, Mac, 1917 (previously listed)	30 41 22.5	81 55 12.1	
T road south at signboard painted "Drewry Ferry 9 miles"	30 41 08.8	81 55 48.0	3,420
T. 3 N., R. 24 E., 30 feet north and 30 feet east of corner of secs. 7, 8, 17, and 18; crossroads	30 41 01.0	81 56 20.5	2,948
T. 3 N., Rs. 23 and 24 E., corner of secs. 7, 12, 13, and 18, wooden post and blazed pine	30 40 58.8	81 57 21.3	5,317
T. 3 N., R. 23 E., corner of secs. 11, 12, 13, and 14; corner post	30 40 57.8	81 58 29.7	5,976
T. 3 N., R. 23 E., corner of secs. 10, 11, 14, and 15; corner post	30 40 56.9	81 59 30.7	5,326

Along highways in west border of quadrangle.

Road forks at signboard painted "Hilliard 8 miles"	30 36 16.1	81 59 56.4	
North end of bridge	30 35 59.4	81 59 53.0	1,714
Crossroads, 2 mail boxes southeast	30 35 42.3	81 59 59.1	1,804
Crossroads at signboard painted "Hilliard 9 miles"	30 35 14.0	81 59 58.1	2,859
North end of bridge	30 33 57.1	81 59 33.9	8,058
Road forks, blazed pine west	30 32 38.2	81 59 16.0	8,126
Crossroads	30 31 27.0	81 59 34.0	7,362

Magnetic declination for east and west borders of quadrangle and in northwest quarter of quadrangle, 1.3° E.

HILLIARD QUADRANGLE—Continued.

Along public roads, between Duval station and Ratliff station near south border of quadrangle. (By J. B. Leavitt.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost XV, 1,390 feet northwest of, on west side of deserted quarters of turpentine still, four corners; center of intersection	30 30 35.4	81 45 25.2	.....
Thomas River bridge, 900 feet southeast of, fork to north, opposite White schoolhouse	30 31 02.7	81 45 46.6	3,329
Thomas River; center of bridge over; center of creek is Duval–Nassau county line	30 31 06.5	81 45 56.0	908
Thomas River bridge, 0.5 mile west of, nail at trail crossing, in chopped tie of tram road	30 31 04.9	81 46 27.7	2,784
Ratliff station, 1 mile northeast of, 150 feet west of Mr. West's house; three corners at public road southwest to Ratliff station	30 30 35.8	81 47 35.9	6,647
Ratliff station, Prim. Trav. Sta. No. 2, McN 1917; tie with McNair's double chained line	30 30 07.2	81 48 23.3	5,058
Ratliff station, near right of way fence, 40 feet east of center of station building, in 4 by 4 inch concrete block; U.S.C. & G.S. standard b. m. tablet stamped "E_7"	30 30 08.5	81 48 21.5	202

Magnetic declination for east part of south border of quadrangle, 0.7° W.

JACKSONVILLE QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L. McNair.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Jacksonville, tower of United States custom house and post office	30 19 39.14	81 39 37.74	.....
Jacksonville, 100 feet north of railroad signal tower, between the two west tracks; street crossing	30 20 05.2	81 41 09.9	8,493
Public-road crossing; center of double track	30 21 15.2	81 42 39.9	10,593
Railroad crossing, Atlantic Coast Line R. R. to Expert	30 21 35.0	81 43 04.5	2,939
Road crossing, second class; center of north-bound track	30 22 09.2	81 43 46.9	5,081
Road crossing	30 22 56.1	81 44 16.7	5,408
Road crossing; center of double-track roadbed	30 24 09.9	81 44 59.2	8,333

Magnetic declination for line, 1° 17′ E.

Along Florida East Coast Ry. from Jacksonville to St. Augustine. (By C. B. Kendall.)

Jacksonville, on custom-house and post-office building; center of cupola (U.S.C. & G.S.)	30 19 39.14	81 39 37.74	.....
Jacksonville, Florida East Coast Ry. bridge over St. Johns River; center of draw span	30 19 21.3	81 39 57.0	2,468
South Jacksonville, 1,310 feet southeast of southeast end of Florida East Coast Ry. bridge, 8 feet south of main track and about 100 feet northwest of junction of main track with spur to shipbuilding plant; U. S. C. & G. S. station mark, a concrete block 2 by 2 feet with gas pipe in center	30 18 53.6	81 39 38.6	3,230
South Jacksonville, Hendrix Avenue crossing of Florida East Coast Ry., center of crossing	30 18 39.7	81 39 17.9	2,292
Philips station, public-road crossing at	30 17 47.6	81 38 35.0	6,471
Milepost Jax. 3, 540 feet southeast of public-road crossing; center of track	30 17 17.4	81 38 13.6	3,580
Bowden station, about 1 mile northwest of, 100 feet northwest of milepost Jax. 4, public-road crossing; center of track	30 16 38.0	81 37 45.9	4,659
Bowden station, at south end of siding, 60 feet south and 25 feet west of public-road crossing, 20 feet south of road, in fence corner; iron post stamped "Prim. Trav. Sta. No. 1, K 1917"; azimuth of center of railroad track, 328° 29′ 30″	30 15 52.7	81 37 14.6	5,338
Milepost Jax. 6; center of track opposite	30 15 08.2	81 36 42.4	5,309

JACKSONVILLE QUADRANGLE—Continued.

Along Florida East Coast Ry. branch line from South Jacksonville via Pablo Beach to Mayport. (By C. B. Kendall.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
South Jacksonville, at east edge of, Jacksonville-St. Augustine public road crossing, center of track	30 18 31.6	81 38 55.4	.....
South Jacksonville, 1 mile east of, public-road crossing; center of track	30 18 18.0	81 38 07.1	4,456
St. Nicholas station, public-road crossing; center of track	30 18 13.4	81 37 53.0	1,322
Oak Cemetery, public-road crossing; center of track	30 18 00.4	81 37 25.0	2,777
Spring Glen station, 130 feet east of, public-road crossing; center of track	30 17 40.8	81 36 35.8	4,744
Milepost 5, public-road crossing; center of track	30 17 26.0	81 35 45.8	4,630
Hogan station, 50 feet west of, public-road crossing; center of track	30 17 17.6	81 34 42.2	5,644
Hogan station, 0.5 mile east of, in top of north end of east abutment of trestle over Pottsburgh Creek; iron post stamped "Prim. Trav. Sta. No. 6, K 1917"; azimuth of center of track to east, 278° 00′ 30″	30 17 14.2	81 34 13.0	2,579
Hogan station, 1 mile east of, public-road crossing at siding to sand pit; center of main track	30 17 11.2	81 33 40.5	2,869
Milepost 8; center of track opposite	30 17 11.0	81 32 46.6	4,717
Milepost 9; center of track opposite	30 17 11.7	81 31 46.4	5,280
Milepost 10; center of track opposite	30 17 12.3	81 30 46.2	5,280
Center Park, in northeast corner of intersection of public road and Florida East Coast Ry., at southwest corner of front-yard fence to residence, 50 feet north and 20 feet east of center of main track at crossing; iron post stamped "Prim. Trav. Sta. No. 4, K 1917"; azimuth of center of track to east, 269° 15′ 00″	30 17 13.3	81 30 02.0	3,880

Along public roads from Duval station east to Crane triangulation station (U. S. C. & G. S.)* (By J. B. Leavitt.)

Duval station, 570 feet south of, public-road crossing; center of track	30 29 20.3	81 37 33.2	.....
Duval station, 1.3 miles southeast of, on north and south graded road, 400 feet south of crossroads; 4-corner road crossing	30 28 38.2	81 36 32.9	6,779
Duval station, 1.8 miles southeast of, forks, at pine tree on west side of road, painted elevation, 16.6 feet	30 29 00.9	81 36 13.5	2,837
Dim crossroads, 115 feet north to charred pine stump, painted elevation, 22.8 feet	30 29 10.8	81 35 43.2	2,826
Holly Grove schoolhouse, 1.2 miles southeast of, forks, elevation painted, 23.7 feet	30 29 36.4	81 32 06.2	.....
Walter Williams's cornfield, at corner of, 600 feet southeast of house, in root of pine tree; nail and washer, tree painted "t. b. m., 26.6 feet"	30 29 13.7	81 31 42.0	3,119
Dim crossroads, 0.9 mile southeast of; painted elevation, 22.6 feet	30 29 01.9	81 30 47.6	4,903

Magnetic declination near northeast corner of quadrangle, 0.9° W.

Along Seaboard Air Line Ry. between Jacksonville and Duval. (By. C. B. Kendall and J. B. Leavitt.)

Jacksonville Union Station, about 600 feet west of, between Atlantic Coast Line R. R. main line and track leading to express sheds, 100 feet east of Myrtle Avenue crossing, under railroad yard, U. S. C. & G. S. Prim. Trav. Sta. "Union"; 12 by 12 inch concrete block, with tablet set in top, over which is erected a tripod	30 19 44.0	81 40 36.0	.....
Jacksonville, Enterprise Street crossing; center of street-car track	30 20 09.9	81 40 43.1	2,685
Jacksonville, on city crematory; brick chimney	30 20 35.9	81 40 16.3	3,526
Jacksonville, Davis Street crossing; center of track	30 21 04.4	81 40 02.4	3,124
Jacksonville, Main Street crossing; center of track between street car tracks	30 21 03.9	81 39 14.4	4,205
Jacksonville, east side of Seaboard Air Line main track, at United Grocery Co.'s building; center of water tank	30 21 12.2	81 38 44.5	2,756
Jacksonville, at southwest corner of cemetery, brick-road crossing, center of track at	30 21 50.8	81 38 45.3	3,902
Atlantic Coast Line and Seaboard Air Line railroads, crossing of, at Oceola Fertilizer Co.'s warehouse; center of crossing	30 22 39.4	81 38 46.1	4,911

JACKSONVILLE QUADRANGLE—Continued.

Along Seaboard Air Line Ry. between Jacksonville and Duval—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Panama Street, 800 feet north of, public-road crossing; center of track	30	23	18.5	81	38	53.7	4,006
Trout Creek, bridge over; center of draw span	30	23	35.5	81	38	56.1	1,736
Trout Creek, 0.8 mile north of, opposite yellow house, on road crossing center of track	30	24	20.0	81	39	01.9	4,521
Milepost 9, 800 feet north of, shell-road crossing; center of track	30	25	10.0	81	38	56.8	5,069
Signboard painted "East Port Jct.," 50 feet south of, on public-road crossing; center of track	30	25	54.3	81	38	42.1	4,660
East Port Junction, 150 feet south of switch, on shell-road crossing; center of track	30	26	41.5	81	38	26.3	4 961
Broward station, 250 feet northeast of, 50 feet east of center of track, 30 feet west of center of shell road; iron post stamped "Prim. Trav. Sta. No. 17, K 1917"; azimuth of center of track to north, 196° 09′ 30″	30	27	41.7	81	38	05.6	6,348
Milepost 13, opposite center of track	30	28	38.2	81	37	47.3	5,929
Duval station, 570 feet south of, public-road crossing; center of track at	30	29	20.3	81	37	33.2	4,431

Along Atlantic Coast Line R. R. between Green Cove Springs and Jacksonville. (By J. B. Leavitt.)

Ortega station, 1.1 miles east of, crossing of second-class road north; center of track	30	15	18.0	81	42	00.5	.....
Ortega station, public road crossing, 100 feet north of switch, center of track	30	16	01.1	81	42	35.6	5,338
McGirts Creek bridge; center of draw span	30	16	24.6	81	43	02.8	3,360
McGirts Creek bridge, 800 feet northwest of, road crossing at Plauer, center of track	30	16	30.3	81	43	09.3	810
Milepost J 5, 50 feet south of, public-road crossing; center of track	30	17	17.8	81	43	15.1	4,826
Milepost J 4, 70 feet south of, public road crossing; center of track	30	18	09.5	81	43	13.0	5,225
Wessner station, at Edgewood Avenue crossing on Atlantic Coast Line R. R., 2 feet west of telephone pole, 30 feet north of center of road and 50 feet east of center of track at crossing; iron post stamped "Prim. Trav. Sta. No. 12, K 1917"	30	18	27.4	81	42	49.0	2,845
Milepost J 3, 590 feet northeast of, brick-road crossing; center of track	30	18	46.1	81	42	20.2	3,079
Jacksonville, Stockton Street crossing; center of main track	30	19	18.7	81	41	30.4	5,470
Jacksonville, in center in railroad yards just west of Union Station; U. S. C. & G. S. Primary Traverse Station "Union," concrete block with gas pipe	30	19	44.0	81	40	36.0	5,407
Jacksonville, U. S. custom-house cupola; U. S. C. & G. S. triangulation station	30	19	39.14	81	39	37.74	5,131

Along public roads between Duval and Ratliff stations. (By J. B. Leavitt.)

Duval station, 570 feet south of, road crossing; center of track	30	29	20.3	81	37	33.2	.....
Duval station, 1.4 miles southwest of, 0.4 mile northeast of Mr. Higginbotamer's residence, four corners; center of intersection	30	28	37.3	81	38	45.5	7,676
Cedar Creek crossing, center of road at ford	30	28	05.5	81	39	24.0	4,658
Cedar Creek crossing, 0.7 mile west of, at drain crossing; center of road, 10 feet south to oak tree blazed with X in face	30	28	00.2	81	40	05.7	3,686
Big Cedar Creek crossing; center of road	30	27	30.6	81	40	50.7	4,945
Big Cedar Creek crossing, 1.4 miles southwest of, in front of Mr. Richeson's residence; center of road	30	26	29.4	81	41	35.9	7,342
Four corners, crossing of the "Lem Turner" road with "Dunns Avenue" road; center of intersection	30	26	18.5	81	41	53.5	1,894
Bridge over Cedar Creek (dry), 0.6 mile south of; center of main road at fork to east	30	27	22.8	81	42	22.6	6,977
Bridge over Cedar Creek (dry); center of	30	27	53.6	81	42	24.4	3,112
Milepost X 1, 3,520 feet north of; center of small bridge	30	28	32.3	81	42	46.8	4,372
Center of culvert, in swamp (Harton Creek)	30	29	06.8	81	43	19.0	4,481
Braddock schoolhouse, 100 feet south of, near northeast corner of pasture; center of crossroads	30	29	33.7	81	44	18.9	5,904

Magnetic declination on west half of north border of quadrangle, 0.8° W.

JACKSONVILLE QUADRANGLE—Continued.

Along Seaboard Air Line Ry. (By C. B. Kendall.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost J 5, 160 feet west of; crossroad	30 19 29.8	81 44 37.5	
Road crossing, road north and south	30 19 36.3	81 43 52.1	4,030
Milepost J 3, opposite; center of track	30 19 47.0	81 42 36.7	6,700
McDuff Avenue crossing	30 19 49.2	81 42 21.0	1,390
Brick chimney of dismantled factory	30 19 47.0	81 41 51.4	2,605
Jacksonville, Estelle Street crossing; center of main track	30 19 56.3	81 41 30.8	2,034
Jacksonville, U. S. C. & G. S. traverse station "Union"	30 19 44.02	81 40 36.0	4,962

LAKE BUTLER QUADRANGLE.

Along highways in northeast corner of quadrangle. (By H. S. Senseney.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Bend in road, 60 feet south to two dead pines on east side of road, 24 feet west to burnt stump	30 14 13.5	82 15 29.4	
Fence line, east and west	30 13 43.7	82 15 27.0	3,023
Road forks, at signboard	30 13 15.5	82 15 26.7	2,847
Crossroads, rail fence west	30 12 55.2	82 15 16.6	2,230
Gate through wire fence	30 12 12.3	82 15 05.3	4,434

Magnetic declination for east border of quadrangle, 1° 34′ E.

LAWTEY QUADRANGLE.

Along highways and Atlantic Coast Line R. R. in west part of quadrangle. (By H. S. Senseney.)

Station.	Latitude.	Longitude.	Distanec between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads, house about 500 feet northwest	30 11 21.7	82 14 09.2	
Crossroads, signboards reading, "Sanderson 6 miles; Stark 16 miles; Olustee 15 miles"	30 10 44.6	82 13 33.1	4,908
Crossroads	30 09 51.3	82 13 07.9	5,818
Crossroads	30 09 06 4	82 12 44.0	5,003
Sapp station, 70 feet southeast of road crossing at, 6 feet north of northwest corner of post office; iron post stamped "Prim. Trav. Sta. No. 7, S 1917"	30 08 50.6	82 11 07.6	8,605
Road crossing	30 08 22.7	82 11 20.6	3,038
Road crossing	30 07 41.0	82 12 02.3	5,579
Road crossing	30 07 03.9	82 12 39.4	4,960
Ellerbee, road crossing at	30 06 02.4	82 12 59.5	6,462
Bradford Farms station, in front of; center of track	30 04 22.9	82 13 14.5	10,108
Bradford, at city-limit sign; road crossing	30 04 13.2	82 13 28.4	1,561
Rainford station, road crossing at	30 03 49.4	82 14 12.6	4,574
Road forks	30 03 32.4	82 14 12.2	1,716
Road forks, at road west to New River, 70 feet east of corner of rail fence, 4 feet west of blazed pine tree	30 02 39.8	82 14 16.7	5,330
New River bridge; north end of	30 02 14.7	82 13 22.7	5,380
Road east, signboards reading "Rainford 2.5 miles; Starke 8.5 miles; Lawtey 9 miles"	30 02 00.6	82 13 05.9	2,045
New River, 3.7 miles northeast of, 20 feet west of three corners, on Starke and Lake Butler public road, 1,400 feet east of dwelling house, 1,000 feet south of log house; iron post stamped "Prim. Trav. Sta. No. 72, 149, 1911"	30 00 15.5	82 13 41.4	11,060

LAWTEY QUADRANGLE—Continued.

West along highways from Highland to Sapp.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Highland, 610 meters south of railroad station, 250 meters south of water tank, on the highest land near the railroad (about 210 feet above sea). Station is on east side of track 9.74 meters from a point 4.82 feet above east rail. An 8-inch terra-cotta pipe 2.5 feet long and filled with cement mortar, in which is embedded a ½-inch iron rod marks the center. This pipe projects 6 inches above ground. (U. S. C. & G. S.).	30	06	28.65	82	02	52.92	.....
Crossroads, small blazed pines northwest and northeast	30	06	52.9	82	03	25.4	3,760
Road forks, 65 feet west of lone dead tree	30	06	41.0	82	04	31.3	5,915
T. 4 S., R. 22 E., corner of secs. 27, 28, 33, and 34; wooden post	30	06	49.7	82	05	55.5	7,441
Road forks	30	06	35.3	82	06	13.5	2,155
Road forks, 200 feet east of slough	30	06	45.7	82	08	42.0	13,087
T. 4 S., Rs. 21 and 22 E., corner of secs. 25, 30, 30, and 31; iron pipe with cap	30	06	48.3	82	08	57.8	1,412
Road forks, on north side of road; blazed stump	30	07	18.1	82	10	05.1	6,631
Sapp, Prim. Trav. Sta. No. 7 S (previously described)	30	08	50.6	82	11	07.6	10,840

Magnetic declination for north border of quadrangle, 1° 31′ E.; near middle of quadrangle, 2° 10′ E.

MACCLENNY QUADRANGLE.

West along Seaboard Air Line Ry. from Baldwin to Sanderson. (By H. S. Senseney.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost J 21, C 188, 425 feet west of; road crossing	30	17	47.0	82	00	38.5	.....
Mattox, crossing of Atlantic Coast Line and Seaboard Air Line railroads	30	17	35.4	82	02	25.9	9,490
Baker-Nassau county line (indefinite)	30	17	31.7	82	02	59.7	2,985
Road crossing	30	17	25.0	82	04	02.5	5,551
Milepost J 26, C183	30	17	11.7	82	05	31.1	7,887
Macclenny, west of depot; road crossing	30	16	53.2	82	07	20.1	9,731
Road crossing (wire gate south of track)	30	16	46.3	82	08	00.9	3,650
Glen St. Mary, 150 feet west of depot; road crossing	30	16	29.7	82	09	38.7	8,740
Road south to nurseries, center of track opposite	30	16	24.2	82	10	11.2	2,901
Road crossing at switch	30	16	18.8	82	10	42.6	2,810
Road crossing 25 feet east of switch	30	15	53.7	82	13	10.5	13,980
Road crossing	30	15	45.3	82	13	59.5	4,381

Along highways from Macclenny to Stokesville, Ga.

Macclenny, road crossing west of depot	30	16	53.2	82	07	20.1	.....
Macclenny, 60 feet west and 25 feet north of road crossing west of depot, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 4, S. 1917"	30	16	53.4	82	07	21.0	79
Road forks, blazed tree east	30	17	20.7	82	07	09.6	2,936
Road forks, two blazed pines west	30	18	34.1	82	06	44.9	7,730
NOTE.—There is another road fork 135 feet north.							
Road forks at corner of rail fence	30	19	04.8	82	06	30.9	3,327
Road forks 30 feet north of signboard painted "17 M. to Taylor"	30	19	27.2	82	06	09.0	2,967
Road forks 35 feet south of small wooden culvert	30	19	55.4	82	05	54.8	3,107
Road forks, blazed burnt stump west	30	20	07.8	82	05	50.3	1,322
Road forks 25 feet north of small wooden culvert, blazed pine and stump east	30	20	40.4	82	05	19.9	4,231
Crossroads, house west	30	21	04.4	82	04	55.8	3,320
Florida-Georgia State line, St. Marys River; center of bridge over	30	21	32.2	82	04	55.9	2,801

MACCLENNY QUADRANGLE—Continued.

Along highways from Stokesville, Ga., eastward.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
East bank of St. Marys River, at ford	30 23 01.8	82 02 14.3	.....
Crossroads, at southeast corner; blazed stump marked "U. S."	30 23 18.4	82 01 03.2	6,452
Road forks	30 23 25.7	82 00 25.2	3,403

From bridge over St. Marys River, 2 miles south of Stokesville, Ga., west along highways.

Florida–Georgia State line, St. Marys River; center of bridge over	30 21 32.2	82 04 55.9	.....
Road forks	30 21 23.0	82 05 26.3	2,820
Small bridge	30 21 05.6	82 06 18.1	4,868
Bridge, center of	30 20 48.0	82 07 01.6	4,207
South fork of St. Marys River, south end of bridge over	30 21 09.9	82 07 47.2	4,563
Road forks at sign post painted "McClenny 6 miles"	30 21 40.1	82 08 05.2	3,430
Crossroads, blazed stump southeast	30 21 08.5	82 08 42.1	4,542
Crossroads, blazed pine southeast and southwest	30 20 31.8	82 09 25.0	5,284
Milepost Jax 34 M	30 20 55.4	82 10 36.7	6,725
Bridge, south end of	30 21 06.9	82 11 08.2	2,992
Milepost Jax 35 M	30 21 07.6	82 11 32.4	2,122
Milepost Jax 36 M	30 21 47.0	82 12 05.4	4,917
T-road west	30 22 09.4	82 12 18.7	2,546
Bridge, center of	30 21 41.9	82 12 52.4	4,058
Bridge, south end of	30 21 50.4	82 13 18.1	2,411
Post at fence corner, marked "32–4"	30 22 23.4	82 13 49.2	4,311
Baxter, about 10 miles south of, at forks of road to Taylor, 2 feet south of signpost painted "Taylor 5.5 Mi."; iron post stamped "Prim. Trav. Sta. No. 8, S 1917"	30 23 02.8	82 14 31.0	5,406

North along highways near west border of quadrangle from primary traverse station No. 8 to Baxter.

Small bridge, center of	30 24 01.1	82 14 28.3	5,893
Small bridge	30 24 46.4	82 14 20.9	4,622
Crossroads, signboards painted "Taylor 3.5 M., Kenny 4 M., Baxter 8M., McClenny 13 M."	30 25 22.6	82 14 28.4	3,718
Bridge, north end of	30 25 53.1	82 14 30.9	3,093
Road forks	30 27 24.5	82 14 25.7	9,244
House of Pink Rolloson, center of road in front of	30 28 07.6	82 13 51.8	5,270
Road forks at corner of rail fence	30 28 45.6	82 13 13.3	5,110
T-road east	30 29 50.7	82 13 13.6	6,584

North along highways near west border of quadrangle.

T-road east	30 20 26.9	82 14 57.0	.....
Crossroads, signboard to Catanese gristmill	30 21 26.2	82 14 32.8	6,355
Crossroads	30 22 27.9	82 14 26.4	6,259
Primary Traverse Station No. 8	30 23 02.8	82 14 31.0	3,555

Magnetic declination for south border of quadrangle, 1° 31′ E.; for west border of quadrangle, 1° 41′ E.; for east border of quadrangle, 1° 20′ E.; for center of quadrangle, 1° 23′ E.

MAYPORT QUADRANGLE.

Along the Florida East Coast Ry. from South Jacksonville to Mayport. (By C. B. Kendall.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 11, center of track opposite	30 17 13.4	81 29 46.0	.....
Milepost 12, center of track opposite	30 17 14.1	81 28 45.7	5,280
Milepost 13, center of track opposite	30 17 14.8	81 27 46.8	5,170
Milepost 14, center of track opposite	30 17 15.4	81 26 46.4	5,280
San Pablo station, public-road crossing; center of track	30 17 15.8	81 26 10.3	3,170

MAYPORT QUADRANGLE—Continued.

Along the Florida East Coast Ry. from South Jacksonville to Mayport—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Bridge over Pablo Creek on East Coastal Canal, in top of south end of draw-span abutment; tablet stamped "Prim. Trav. Sta. No. 5, K 1917, Elev. 9;" azimuth of center of track for 3,000 feet east, 269° 25′ 48″	30	17	16.2	81	25	18.2	4,565
Pablo Beach, 0.7 mile west of, public-road crossing; center of track	30	17	16.8	81	24	21.7	4,955
Pablo Beach, station 500 feet north of, public-road crossing; center of track	30	17	27.3	81	23	29.1	4,731
Manatee station, opposite center of, center of track	30	18	01.0	81	23	34.9	3,435
Cashens station, opposite center of station platform; center of track	30	19	03.0	81	23	45.9	6,338
Neptune station, brick-road crossing at; center of track	30	19	28.0	81	23	49.3	2,550
Atlantic Beach station, 550 feet south of, at Seventh Street crossing; center of main track	30	19	53.5	81	23	52.9	2,600
Atlantic Beach, Atlantic Beach Hotel; flag staff at center of	30	20	00.3	81	23	48.4	795
Atlantic Beach, Atlantic Beach Hotel, brick chimney, U. S. C. & G. S. triangulation station "Continental chimney"	30	20	01.71	81	23	51.26	.....
Milepost 21, center of track opposite	30	20	35.0	81	23	58.6	3,422
Milepost 22, center of track opposite	30	21	27.2	81	23	59.8	5,280
Manhattan Beach station, at north end of platform, opposite road east; center of track	30	21	59.8	81	24	00.1	3,300
Milepost 23, 100 feet north of, public-road crossing; center of track	30	22	20.3	81	24	02.0	2,070
East Mayport station, 700 feet south of, on railroad filtering water tank; center of cupola	30	22	48.6	81	24	33.3	3,967
East Mayport station, 100 feet south of, public-road crossing; center of main track	30	22	54.0	81	24	40.0	804
Mayport, St. Johns River Lighthouse; U. S. C. E. triangulation station	30	23	36.01	81	25	34.61	6,398
Mayport station, 250 feet southwest of, at end of main track; safety block	30	23	18.8	81	25	59.2	2,762
Mayport Hotel flagstaff, U. S. C. E. triangulation station	30	23	30.94	81	25	53.31	1,325
Mayport, U. S. C. E. warehouse, at west end of, platform built on roof near chimney, U. S. C. E. triangulation station, warehouse	30	23	35.20	81	25	53.26	.....

Along public roads from Duval station east to Crane triangulation station, U. S. Coast and Geodetic Survey. (By J. B. Leavitt.)

Bridge over small creek, 1.4 miles northwest of, hub on east side of road, 1 foot from wagon track, 15 feet southwest to small oak bush blazed on four sides, 20 feet due north to pine tree, blazed, with X cut in face	30	28	25.3	81	29	44.4	.....
Small creek, center of bridge over	30	27	36.9	81	28	39.4	7,497
Center of road at edge of brush, the end of causeway over swamp, 15 feet east to dead-pine snag	30	27	36.3	81	28	35.4	360
Crane triangulation station, 3.3 miles south of, 0.4 mile east of causeway; center of road at bend to left	30	27	40.4	81	28	13.4	1,960
Crane triangulation station (U. S. C. & G. S.)	30	30	31.37	81	28	15.13	17,275

Magnetic declination near northwest corner of quadrangle, 1.1° W.

MIDDLEBURG QUADRANGLE.

Along Atlantic Coast Line R. R. between Greencove Springs and Jacksonville. (By C. B. Kendall.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Russel station, about 0.7 mile northwest of, milepost J 23; center of track opposite	30	03	46.9	81	45	18.1	.....
Milepost J 22, center of track opposite	30	04	31.2	81	45	43.2	4,984
Bridge over Black Creek; center of draw span pier	30	04	50.2	81	45	42.3	1,919
Doctor's Inlet station, 1,040 feet northwest of, Jacksonville Green Cove Springs hard-road crossing; center of track	30	06	00.5	81	46	10.6	7,520
Doctor's Inlet station, 0.9 mile north of, 1 mile south of Peoria station, public-road crossing; center of tract	30	06	35.8	81	46	10.4	3,572
Peoria station, on west side of track, 5 feet south of telegraph pole, 30 feet west of southwest corner of station platform; iron post stamped "Prim. Trav. Sta. No. 11, K 1917"	30	07	24.8	81	45	51.1	5,230
Peoria station, 1 mile northeast of, public-road crossing; center of tract	30	08	07.8	81	45	16.3	5,318

MIDDLEBURG QUADRANGLE—Continued.

From north border of quadrangle along highways south and east to Peoria. (By C. B. Kendall.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Southern's Camp, center of public road at tram crossing	30 14 44.0	81 53 31.9	.....
Forks of road, 175 feet south of ford of small stream, 400 feet northeast of new small log cabin; second-class roads southeast and southwest	30 14 00.5	81 53 37.0	4,413
Taylor Creek, 0.6 mile north of, fork in road, roads north and northwest, 12 feet northeast to pine snag	30 12 57.8	81 52 44.3	7,847
Taylor Creek, center of, at ford	30 12 26.7	81 52 51.5	3,198
Mr. Moseley's residence, center of chimney at west end of	30 11 56.2	81 52 49.1	3,089
Forks of road, 30 feet south of, center of lane in line between corners, is north end of the Bowling and Jenning's cut-out road to Middleburg	30 11 15.2	81 52 57.6	4,213
T. 4 S., R. 24 E., corner of secs. 2, 3, 10, and 11, opposite fence corner on east edge of roadway; center of road	30 10 20.8	81 52 57.3	5,490
T. 4 S., R. 24 E., corner of secs. 10, 11, 14, 15, 20 feet north of small bridge, opposite white 4 by 4 inch post on east edge of road; center of road	30 09 27.8	81 52 56.8	5,360
Small plank bridge, 400 feet south of, at intersection of roads; center of north and south road	30 09 18.5	81 52 56.7	940
Plank bridge over small stream, 230 feet north of, 20 feet northwest to signboard painted "Middleburg, Maxville Forks"	30 08 45.7	81 52 56.4	3,310
T. 4 S., R. 24 E., corner of secs. 14, 15, 22, and 23, opposite 4 by 4 inch post (probably corner post) on east edge of road	30 08 35.4	81 52 56.2	1,040
T. 4 S., R. 24 E., corner of secs. 22, 23, 26, and 27, opposite white 4 by 4 inch stake (probably corner post) on west edge of road	30 07 42.3	81 52 55.5	5,371
Crossroads, public	30 07 18.8	81 52 55.2	2,370
T. 4 S., R. 24 E., corner of secs. 26, 27, 34, and 35, at T road north, 2 feet south of white pine 4 by 4 foot post marking section corner, on south edge of road; iron post stamped "Prim. Trav. Sta. No. 16, K 1917"	30 06 49.0	81 52 54.9	3,012
T. 4 S., R. 24 E., corner of secs. 25, 26, 35, and 36, T road south to Middleburg, on north edge of road, 500 feet east of Hatcherville schoolhouse	30 06 49.8	81 51 53.8	5,366
Black Pond Baptist Church, public T road south at, 15 feet north to pump, corner of secs. 25, 30, 31, and 36, T. 4. S., Rs. 24 and 25 E.	30 06 50.6	81 50 53.9	5,256
T. 4 S., R. 25 E., corner of secs. 29, 30, 31 and 32, center or road opposite stake at south edge of road	30 06 51.2	81 49 52.7	5,381
T. 4 S., R. 25 E., corner of secs. 28, 29, 32, and 33, opposite post on south edge of road, 490 feet east of crossroads; center of road	30 06 51.9	81 48 52.3	5,311
T. 4 S., R. 25 E., corner of secs. 27, 28, 33, and 34, at ditch to north; center of road	30 06 52.7	81 47 51.5	5,340
Public crossroads, road southwest-northeast at telephone line; center of intersection	30 06 52.9	81 47 33.9	1,540
T. 4 S., R. 25 E., corner of secs. 26, 27, 34, and 35, on south edge of road, 10 feet north of well, 35 feet west of corner of rail fence; stake	30 06- 53.5	81 46 51.7	3,711
T. 4 S., R. 25 E., corner of secs. 26, 27, 34, and 35, 1,320 feet east of, at T road west to Middleburg, center of Jacksonville-Green Cove Springs asphalt road	30 06 53.8	81 46 36.8	1,305
Crossroads, center of asphalt road at	30 07 43.2	81 46 19.1	5,229
Peoria, Prim. Trav. Sta. No. 11, K 1917 (described in another list, p. 35)	30 07 24.8	81 45 51.1	3,083

From Hatcherville schoolhouse south to Middleburg (spur line). (By C. B. Kendall.)

Tps. 4 and 5 S., R. 24 E., corner of secs. 1, 2, 35, and 36, at public T road west; center of junction	30 05 56.6	81 51 53.2	.....
T. 5 S., R. 24 E., corner of secs. 1, 2, 11, and 12, public T road west, 10 feet west to center of plank bridge	30 05 04.4	82 51 52.5	5,281
Black Creek, bridge over; center of draw span	30 04 30.8	81 51 49.5	3,394
Middleburg, public T road north, 28 feet northeast to southwest corner of G. A. Chalker's store, 20 feet south to front door of G. R. Trisbee's store, 38 feet northwest to southeast corner of F. W. Buddington's store, 25 feet east to T road south to boat landing	30 04 07.8	81 51 39.6	2,491

MONIAC QUADRANGLE.

(By H. S. Senseney.)

Baxter, 300 feet east of depot, 30 feet south of railroad track; iron post stamped "Prim. Trav. Sta. No. 9 S, 1917"	30 30 46.7	82 14 02.7	.....
St. George, Ga., 1.8 miles east of, in Florida, 35 feet west and 30 feet north of road crossing; iron post stamped "Prim. Trav. Sta. No. 6 S, 1917"	30 31 17.4	82 00 27.2	.....

MONIAC QUADRANGLE—Continued.

Along highways near east border of quadrangle. (By H. S. Senseney.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 3 N., R. 23 E., corner of secs. 9, 10, 15, and 16; corner post	30 40 55.3	82 00 32.2	
T road east	30 40 54.3	82 01 56.8	7,381
Crossroads, blazed pine west	30 40 17.9	82 02 07.2	3,786
Hilliard, 6 miles west by 3 miles south of, 90 feet south by 15 feet east of crossroads, at mail box of J. J. Johnson; iron post stamped "Prim. Trav. Sta. No. 14, S. 1917;" azimuth to blazed pine tree 290 feet south and 15 feet west of post, 349° 09′ 20″	30 39 24.5	82 01 49.8	5,598
Crossroads at A. A. Geiger's mail box	30 38 22.9	82 01 13.0	7,005
Crossroads at mail box 34	30 37 50.9	82 00 49.4	3,836
Crossroads at W. H. Wingate's mail box	30 36 53.6	82 00 07.7	6,835

Magnetic declination for east border of quadrangle, 1.3° E.

ORANGE PARK QUADRANGLE.

Along Florida East Coast Ry. between Jacksonville and St. Augustine. (By C. B. Kendall.)

Station.	Latitude.	Longitude.	Distance between stations.
Ry. Milepost Jax. 7, 200 feet southeast of, public-road crossing; center of track	30 14 21.9	81 36 09.8	
Milepost Jax. 8, 230 feet northwest of, at public-road crossing, center of track	30 13 40.9	81 35 40.8	4,860
Milepost Jax. 9, center of track, opposite	30 12 51.4	81 35 08.0	5,510
Sunbeam station, public-road crossing at	30 12 34.4	81 34 53.9	2,370
Sunbeam 1.1 miles southeast of, public-road crossing, center of track	30 11 33.0	81 34 13.1	6,641
Milepost Jax. 12, public-road crossing, center of track	30 10 48.3	81 33 22.0	6,809
Greenland station, public road crossing at, center of main track	30 10 15.7	81 32 49.1	4,381
Milepost Jax. 14, public-road crossing at, center of track	30 09 29.5	81 32 02.4	6,210
Bayard, about 600 feet southeast of station, in northwest corner of junction of Jacksonville-St. Augustine public road with road north, 50 feet north and 30 feet east of Florida East Coast Ry. main track at road crossing; iron post stamped "Prim. Trav. Sta. No. 2, K 1917:" azimuth of center of main track to south, 318° 46′ 14″	30 08 35.4	81 31 07.1	7,308
Bayard, 0.7 mile southeast of, 450 feet northwest of, milepost Jax. 16, public-road crossing, center of track at	30 08 14.2	81 30 46.4	2,808
Milepost Jax. 17, 1,250 feet northwest of, public-road crossing: center of track at	30 07 40.8	81 30 12.8	4,480

Along highways between Durbin and Orangedale near south border of quadrangle. (By C. B. Kendall.)

Bridge over Sampson Branch, 370 feet east of, three corners at public T road north, 15 feet north to center of triangle	30 03 53.2	81 30 01.1	
Sampson schoolhouse, fence post at southeast corner of grounds, public roads west and southwest	30 03 47.8	81 30 15.3	1,360
Sampson schoolhouse, 1 mile west of, 300 feet southwest of George Rodder's residence, which is old Durbin post office: in northwest corner of crossroads, iron post stamped "Prim. Trav. Sta. No. 7, K 1917. Elev. 31"	30 03 42.6	81 31 17.1	5,459
Old Durbin post office, 1 mile southwest of, four corners, 12 feet northwest to stump, 25 feet west to tree with tag marked "29.0"	30 03 30.60	81 32 15.5	5,272
Bridge over Trout Creek, 0.3 mile east of, at fork to northeast, on south edge of road, oak tree painted "t. b. m. 24.2:" copper nail and washer in root	30 02 52.9	81 33 19.2	6,776
Trout Creek, center of bridge over, painted "10.5 W. 4.8"	30 02 47.7	81 33 39.7	1,875
Trout Creek, bridge, 0.5 mile southwest of, Julia turpentine still 0.7 mile northeast of, 15 feet south and 25 feet east of intersection of Mill Creek-Troutdale and Durbin-Orangedale public roads: iron post stamped "Prim. Trav. Sta. No. 8, K 1917. Elev. 31"	30 02 39.0	81 34 15.8	3,292
Julia turpentine still, at southeast corner of front yard to residence, between residence and store; fence post, painted "28.8"	30 02 27.2	81 34 52.7	3,462
Julia still, 0.7 mile southwest of, center of road, 30 feet south of pine tree, painted "29.7"	30 02 02.1	81 35 22.4	3,638
Orangedale post office, 1,000 feet northeast of, public roads east and northeast, 20 feet south to fence post, painted "27.8"	30 01 17.8	81 35 56.6	5,381
Orangedale post office, 0.9 mile southwest of, 0.4 mile northeast of Oakdale landing on St. Johns River, 25 feet south and 15 feet east of intersection of crossroads: iron post stamped "Prim. Trav. Sta. No. 9, K 1917. Elev. 27"	30 00 45.9	81 36 44.8	5,331

ORANGE PARK QUADRANGLE—Continued.

Along second-class roads between Orangedale and Remington triangulation station near south border of quadrangle. (By C. B. Kendall.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Orangedale, 1 mile west of, trail crossing small stream, 300 feet west of dwelling	30 01 00.5	81 36 55.7	.....
Orangedale, about 1.75 miles northwest of: center of small stream at trail crossing	30 01 02.4	81 37 22.9	2,400
Orangedale, about 2 miles northwest of, old chimney place just west of stream crossing: old chimney stands 4 feet high	30 01 07.2	81 37 31.0	861
Hallowes turpentine still, about 0.75 mile southeast of: center of pole bridge over small stream	30 01 17.0	81 37 58.2	2,582
Hallowes turpentine still, 1,500 feet east of, on north edge of road, at forks, pine tree marked with "P. T." cut in face	30 01 34.0	81 38 29.7	3,267
Remington triangulation station, about 2 miles southeast of, vacant house just west of stream; chimney at north end	30 02 03.5	81 38 32.0	2,987
Remington triangulation station, 1 mile northeast of, small dwelling at west edge of clearing; point of roof at south end	30 02 29.6	81 39 11.8	4,387
Remington triangulation station, U. S. C. & G. S., on east side of St. Johns River, below bluff in front of Remington Park House, marked underground by half of claret bottle set in cement 2 feet below surface of ground. Over this is 4-inch terra-cotta pipe 2 feet long, set in concrete block 15 inches square and projecting 3 inches above it. Reference mark: Pickle bottle set 2 feet below surface of ground, having above it concrete post 8 inches square, with diagonal cross lines cut on its top. On bluff, 13.20 meters from station, in azimuth 251° 20′ 49″, in line with station and an old cypress tree which stands at water's edge; only tree of kind growing near shore in locality. This tree is 3.55 meters from station, in azimuth 73°. Oak tree on bluff was marked with triangle; it is 10.10 meters from station, in azimuth 263°	30 02 08.88	81 40 06.85	5,271

Magnetic declination along east half of south border of quadrangle, 0.9° W.

Along Atlantic Coast Line R. R. between Green Cove Springs and Jacksonville. (By C. B. Kendall to Russel, thence by J. B. Leavitt to Yukon.)

Green Cove Springs, 1 mile northwest of, Dowling-Shanda log-railroad crossing; center of crossing	30 00 09.9	81 41 27.7	.....
Magnolia Springs station, opposite mail crane; center of track	30 00 28.3	81 41 47.1	2,519
Magnolia Springs station, 0.8 mile northwest of, public-road crossing; center of track	30 00 59.7	81 42 20.5	4,319
Williams crossing or Self station, public-road crossing at station platform: center of track	30 01 44.3	81 43 07.9	6,142
Milepost J 25, center of track opposite	30 02 27.7	81 43 54.0	5,969
Milepost J 25, 0.3 mile northwest of, second-class road crossing; center of track	30 02 38.8	81 44 05.8	1,520
Russel station, 50 feet south of, public-road crossing; center of track	30 03 22.4	81 44 52.0	5,990
Milepost J 17, 0.4 mile northeast of, second-class road crossing; center of track	30 08 34.2	81 44 36.7	.....
Gate, entrance to Wadesboro Spring, 50 feet west of, public-road crossing; center of track	30 09 18.6	81 43 42.0	6,567
Orange Park station, 300 feet southwest of, public-road crossing; center of track	30 09 55.5	81 42 38.8	6,691
Orange Park station, 500 feet north of, public-road crossing; center of main track	30 10 03.4	81 42 38.7	796
Milepost J 13, center of track opposite	30 10 50.4	81 42 40.6	4,751
Orange Park station, 1.5 miles north of, public-road crossing; center of track	30 11 22.8	81 42 41.9	3,270
Milepost J 11, 70 feet south of, public-road crossing: center of track	30 12 32.5	81 42 22.9	7,234
Old Yukon post office, public-road crossing at; center of track	30 13 09.8	81 42 11.5	3,900
Yukon station, 520 feet north of, public-road crossing; center of track	30 13 57.1	81 41 57.1	4,940
Yukon station, 1.1 miles north of, 100 feet west of, public-road crossing; center of track	30 14 50.7	81 41 54.1	5,424

PALM VALLEY QUADRANGLE.

Along the Florida East Coast Ry. from Jacksonville to St. Augustine. (By C. B. Kendall.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost Jax. 18, 2.5 feet west of, in 6 by 6 inch concrete block; U. S. C. & G. S. bench mark tablet stamped "M_8"; azimuth of center of railroad, 318° 46′ 04″	30	06	52.0	81	29	24.1	.....
Duval-St. Johns county line signpost; center of track opposite	30	06	15.4	81	28	46.6	4,946
Durbin station, 400 feet northwest of, public-road crossing; center of track	30	05	13.7	81	27	44.4	8,289
Durbin station, 1.7 miles southeast of, road crossing; center of track	30	04	18.3	81	26	48.6	7,440
Siding 22 station, public-road crossing; center of main track	30	03	56.1	81	26	27.1	2,929
Milepost Jax. 23; center of track opposite	30	03	34.2	81	26	07.4	2,810
Woodland station, at south end of siding, 40 feet southwest of second-class road crossing, near north end of gate, in 6 by 6 inch concrete block; U. S. C. & G. S. bench mark tablet stamped "O_3"; azimuth of center of track to south, 321° 55′ 20″	30	02	33.9	81	25	13.7	7,710
Milepost Jax. 26; center of track opposite	30	01	30.6	81	24	16.1	8,150
Sampson siding station, at north end of siding, 50 feet southeast of public-road crossing, 5 feet west of telegraph pole; iron post stamped "Prim. Trav. Sta. No. 3, K 1917"; azimuth of center of railroad to south, 321° 56′ 06″	30	00	45.3	81	23	34.4	5,809

Along highways between Durbin and Orangeville.

Durbin station, 400 feet northwest of, public-road crossing; center of track	30	05	13.7	81	27	44.4	.....
Durbin station, 1 mile southwest of, at fork to south; pine tree painted "U. S. t. b. m. 38.0"	30	04	58.0	81	28	45.9	5,626
Durbin station, about 2.2 miles southwest of, 4 corners in partial clearing, 600 feet south of dwelling, 10 feet northwest to pine painted "25.9"	30	04	21.3	81	29	31.6	5,467

Magnetic declination in southwest part of quadrangle, 0.9° W.

ST. AUGUSTINE QUADRANGLE.

Along Florida East Coast Ry. from Jacksonville to St. Augustine. (By C. B. Kendall.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Sampson siding station, 1.1 miles southeast of, public-road crossing; center of track	29	59	48.9	81	22	44.6	.....
Trestle 30 A, public-road crossing at; center of track	29	59	15.6	81	22	14.5	4,280
Magnolia station, 1 mile northwest of, public-road crossing; center of track	29	58	31.3	81	21	34.7	5,680
Magnolia station, at north end of siding, public-road crossing; center of main track	29	57	47.5	81	20	59.4	5,402
Magnolia station, at a point 200 feet southeast of public-road crossing, 30 feet east of main track, in 6 by 6 inch concrete block; U. S. C. & G. S. bench mark tablet stamped "Q_3"; azimuth of center of railroad to south, 331° 55′ 00″	29	57	46.0	81	20	57.9	202
Magnolia station, 1.1 miles southeast of, public-road crossing; center of track	29	56	55.3	81	20	27.4	5,781
Milepost Jax. 34, 230 feet southeast of, public-road crossing; center of track	29	55	43.9	81	19	43.6	8,180
Baker station, public-road crossing at; center of main track	29	54	58.9	81	19	34.2	4,616
St. Augustine, at north end of railroad yard, trestle 37 A; center of	29	53	50.2	81	19	18.2	7,085
St. Augustine, old fort grounds; center of arched entrance gate	29	53	51.5	81	18	49.8	2,498
St. Augustine, Presbyterian Church dome, U. S. C. & G. S. triangulation station (see App. 6, 1911, p. 438). Ties were made with Water Tower and Catholic Cathedral spire station with the same closures	29	53	36.95	81	19	01.48	1,798

ST. MARYS QUADRANGLE.

Along public roads from Duval Station east to Crane triangulation station, Coast and Geodetic Survey. (By J. B. Leavitt.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Duval station, 1.8 miles north and 3.3 miles east of, at fence corner, 15 feet southwest of intersection of crossroads, about 600 feet north of Mr. Swerington's residence, about 10 feet west of north-south line between secs. 14 and 15; iron post stamped "Prim. Trav. Sta. No. 22, K 1917. Elev. 25"	30 30 12.2	81 34 41.9	.....
Sample Swamp Creek, center of bridge over, bridge painted "Elev. 10.6"	30 30 12.7	81 34 25.6	1,425
Holly Grove schoolhouse, at northeast corner of school yard; fence painted "Elev. 31.5", center of road	30 30 07.5	81 33 11.4	6,507

Magnetic declination near southeast corner of quadrangle, 0.8° W.

Along Seaboard Air Line Ry. (By J. B. Leavitt.)

Primary Traverse Station 19 K, at Yulee	30 37 52.0	81 36 23.7	.....
Milepost 25, center of track opposite	30 38 29.1	81 36 58.0	4,794
Trestle over creek, center of	30 38 54.3	81 37 21.7	3,280
Milepost 26, center of track opposite	30 39 11.0	81 37 37.4	2,180
Second-class road crossing	30 39 30.5	81 37 55.8	2,540
Trestle over swamp, center of	30 39 45.4	81 38 08.2	1,860
Becker's sawmill, railroad crossing at	30 40 16.3	81 38 31.6	3,731
Milepost 28, center of track opposite	30 40 36.4	81 38 46.9	2,429
Milepost 29	30 41 20.0	81 39 20.0	5,280
Second-class road crossing	30 41 38.2	81 39 33.8	2,184
Milepost 30, center of track opposite	30 42 03.8	81 39 53.1	3,085
Gross, 40 feet west of railroad station, 28 feet north of public road; iron post stamped "Prim. Trav. Sta. No. 23 K. Elev. 25 1917"	30 42 52.1	81 40 30.2	5,856
Milepost 32, center of track opposite	30 43 31.3	81 40 59.4	4,709
East and west road crossing, 1,570 feet south of milepost 33	30 44 02.9	81 41 20.3	3,677
St. Marys River, center of draw span over	30 44 28.4	81 41 19.5	2,581

Along Seaboard Air Line Ry. (By C. B. Kendall.)

Italia, 60 feet west and 25 feet north of road crossing, 7 feet northwest of northwest corner of railroad station; iron post stamped "Prim. Trav. Sta. No. 13, S 1917"	30 37 04.4	81 43 02.8	.....
Italia, 0.40 mile east of; center of trestle 18-3 over Boggy Creek	30 37 01.4	81 42 37.1	2,260
Milepost 18, 570 feet west of, at second-class road crossing; center of track	30 36 59.2	81 42 16.5	1,811
Milepost 17, 600 feet west of, at second-class road crossing; center of track	30 36 53.0	81 41 16.8	5,250
Milepost 16, 130 feet east of, at trestle 15-9 over creek; center of track	30 36 51.7	81 40 08.8	5,939
Nero station, 20 feet east of switch at spur; center of track	30 37 03.3	81 39 27.4	3,800
Milepost 14, 730 feet west of, at negro settlement; public-road crossing	30 37 21.4	81 38 23.0	5,915
Milepost 13, center of track opposite	30 37 39.7	81 37 17.7	6,005
Yulee, 0.50 mile west of, at public road crossing; center of main track	30 37 47.9	81 36 48.5	2,679
Yulee station, 300 feet southeast of, 100 feet north of Hugis store, due west of public-road crossing, 2 feet northeast of telegraph pole; iron post stamped "Prim. Trav. Sta. No. 19, K 1917"	30 37 52.0	81 36 23.7	2,201

Along highways and Seaboard Air Line Ry., near west border of quadrangle. (By H. S. Senseney.)

Gate in wire fence	30 39 10.4	81 44 43.3	.....
Gate in wire fence	30 38 48.0	81 44 29.1	2,583
Crossroads, blazed pine east	30 38 08.3	81 44 05.4	4,504
Italia, 10 feet west of northwest corner of depot; iron post stamped "Prim. Trav. Sta. No. 13, S 1917"; azimuth to top of switchstand, 95° 21′ 00″	30 37 04.40	81 43 02.75	8,462
Road crossing	30 37 06.1	81 43 22.1	1,699
Boggy Creek, east end of bridge over	30 36 34.4	81 44 36.3	7,232

Magnetic declination for west border of quadrangle, 1.3° E.

ST. MARYS QUADRANGLE—Continued.

From Duval north along Seaboard Air Line Ry. to Yulee, thence east to east border of quadrangle. (By C. B. Kendall.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost 15, center of track opposite	30	30	20.2	81	37	24.2	.....
Pecan Park, second-class road crossing	30	31	03.3	81	37	23.2	4,360
Tisonia station, 185 feet south of, 30 feet west of center of track; iron post stamped "Prim. Trav. Sta. No. 18, K 1917"	30	31	59.1	81	37	22.2	5,641
Milepost 17, center of track opposite	30	32	04.8	81	37	21.8	570
Milepost 18, center of track opposite	30	32	56.8	81	37	18.5	5,259
Stony Creek, trestle over	30	33	17.7	81	37	16.6	2,120
Milepost 19, center of track opposite	30	33	48.9	81	37	13.5	3,165
Milepost 20, center of track opposite	30	34	34.8	81	36	45.2	5,252
Nassau River, south end of bridge over	30	35	11.1	81	36	21.2	4,230
Nassau River, steel span over, 1,970 feet north of south end, in cement block; U. S. C. & G. S. bronze tablet Z_2	30	35	29.0	81	36	12.3	1,962
Shell-road crossing, 190 feet south of milepost 22	30	36	10.1	81	36	08.0	4,169
Milepost 23, center of track opposite	30	37	04.0	81	36	01.8	5,470
Yulee, Prim. Trav. Sta. No. 19 K (previously described)	30	37	52.0	81	36	23.7	5,222
Yulee, 135 feet northeast of Flood Bros.' store, 120 feet east of south end of station, in concrete block; U. S. C. & G. S. bronze tablet stamped "A_3"	30	37	53.4	81	36	23.9	135
Yulee, railroad crossing of Seaboard Air Line Ry., main line and branch line	30	37	54.4	81	36	25.4	163
Road crossing, 160 feet east of milepost 11	30	38	12.4	81	35	20.8	5,921
Trestle No. 10 over creek	30	38	25.9	81	34	32.9	4,410
Lofton, 0.7 mile west of, second-class road crossing	30	38	19.8	81	33	44.9	4,241
Lofton, 75 feet east of station; road crossing	30	38	03.7	81	33	06.6	3,720
Lofton, 1,900 feet east of; shell-road crossing	30	37	55.7	81	32	47.7	1,840
Trestle 7–2, road crossing at	30	37	31.3	81	31	49.8	5,629
Trestle over creek	30	37	20.9	81	31	25.1	2,400
O'Neil, 420 feet east of station, 2 feet south of milepost 6, 20 feet north of center of track; iron post stamped "Prim. Trav. Sta. No. 20, K 1917"	30	37	04.6	81	30	45.7	3,811
O'Neil station, 15 feet southwest of southwest corner of, in concrete block; bronze tablet of U. S. C. & G. S.	30	37	06.3	81	30	50.3	428

SANDERSON QUADRANGLE.

Along highways near east border of quadrangle. (By H. S. Senseney.)

Milepost "C 173 J 36"	30	15	20.7	82	15	20.0	.....
Sanderson, 150 feet east of depot, 35 feet east of road crossing, 25 feet north of track, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 1, S 1917, B 4" (U. S. C. & G. S. b. m.)	30	15	02.2	82	16	17.5	5,378
Crossroads, three mail boxes, southwest	30	16	06.0	82	16	10.4	6,476
Crossroads, signboard southeast	30	17	03.6	82	16	08.9	5,817
Cedar Creek, south end of bridge over	30	17	33.4	82	16	10.7	3,019
Road forks, rail fence corners southeast	30	18	30.8	82	15	24.7	7,065
Old schoolhouse; center of road in front of	30	19	15.9	82	15	12.1	4,688
Milepost "VI"	30	19	50.0	82	15	10.0	3,455
Bridge, center of	30	20	18.3	82	15	00.5	2,980

GEORGIA.

PRIMARY TRAVERSE.

Agricola, Alapaha, Altamaha, Aonia, Appling, Augusta, Baxley, Black Lake, Bladen, Boulogne, Brooklet, Broxton, Brunswick, Camp Hancock, Chalker, Clarks Hill, Cobbtown, Coffee, Daisy, Danburg, Darien, Dates, Davisboro, Dearing, Egypt, Eulonia, Everett, Folkston, Garfield, Glennville, Gough, Greens Cut, Griswoldville, Hardeeville, Haylow, Heartsease, Hephzibah, Hilltonia, Hinesville, Homerville, Hortense, Jeffersonville, Jesup, Kingsland, Leliaton, Limerick, Lincolnton, Ludowici, Lumber City, Macclenny, Macon, Meldrim, Meriwether, Milledgeville, Millen, Moniac, Nahunta, Naylor, Oak Park, Offerman, Omecron, Ossabaw Island, Peeples, Pembroke, Perrys Mills, Register, Reidsville, Robbins, Rocky Ford, Rosier, St. Marys, Sandersville, Savannah, Sessoms, Shirley, Shoulder, Sparks, Sparta, Spread, Stillmore, Sylvania, Tifton, Travisville, Towns, Valdosta, Vidalia, Wadley, Warrenton, Waycross, Wilcox, Winokur, Wrightsville, and Wyley quadrangles.

APPLING, BACON, BALDWIN, BERRIEN, BIBB, BRYAN, BULLOCH, CAMDEN, CHARLTON, CHATHAM, CLINCH, COFFEE, COLUMBIA, EFFINGHAM, EMANUEL, GLASCOCK, GLYNN, HANCOCK, JEFF DAVIS, JEFFERSON, JENKINS, JOHNSON, LIBERTY, LINCOLN, LOWNDES, McINTOSH, PIERCE, RICHMOND, SCREVEN, TATTNALL, TOOMBS, WARE, WARREN, WASHINGTON, WAYNE, WIGGS, AND WILKINSON COUNTIES.

The following geographic positions on North American datum are based upon United States Coast and Geodetic Survey triangulation and primary traverse stations and United States Geological Survey primary traverse stations in southeastern Georgia.

Credit is given to the chief of the field party at the beginning of each quadrangle list.

For descriptions and geographic positions of stations previously located in Georgia, see United States Geological Survey Bulletins Nos. 122, 216, 245, 276, 310, 440, and 551, and the Twenty-first Annual Report, Part I, also refer to United States Coast and Geodetic Survey Special Publications Nos. 43 and 45 and unpublished data of that Survey.

121166°—23—Bull. 709——4

AGRICOLA QUADRANGLE.

Along highways near east border of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Norton's store, road south at; 40 feet northwest of	33 14 48.6	82 31 54.1	.....
T road south, 40 feet northwest to house	33 14 50.8	82 30 27.3	7,380
Norton's store, 1 mile southeast of; well in front of house	33 14 21.8	82 31 20.0	.....
Creek, course southwest, forks on south side of	33 13 43.8	82 31 06.0	4,020
Dote Peter's house, road opposite, in front of	33 13 20.0	82 31 15.7	2,544
Avera, crossroads at, 1.5 miles north of	33 12 49.2	82 31 27.1	3,262
Avera, railroad crossing, 0.25 mile northeast of	33 11 47.8	82 31 29.0	6,208
Avera, railroad crossing west of station	33 11 37.8	82 31 40.0	1,382
Gin and store, forks of road at, 50 feet southwest to gin	33 10 01.9	82 31 48.4	9,729
T road east, 20 feet northeast to mail box 16 (R. L. Brown)	33 09 09.5	82 31 33.1	5,447
Avera, 4 miles south of, near crossroads, 10 feet south of three mail boxes; iron post stamped "Prim. Trav. Sta. No. 23, 1918 H," 1,200 feet southeast is nail in hub on east side of road, azimuth 337°49′20″; 315 feet northwest is nail in hub on west side of road, azimuth 150° 52′ 30″	33 08 33.4	82 31 15.6	3,940
T road east, 30 feet northeast to mail box	33 07 57.3	82 31 08.2	3,710
Milepost 11 miles from Louisville, road opposite	33 07 14.6	82 30 57.4	4,416
T road west, 40 feet northwest to mail box at oak tree	33 06 41.1	82 30 38.8	3,738
Hardin & Rodes store, road opposite	33 06 13.8	82 30 22.1	3,100
Stapleton schoolhouse, crossroads at	33 06 03.6	82 30 15.9	1,166

Magnetic declination for east border of quadrangle, 1° 20′ E.

Along Augusta Southern R. R. (By E. L. McNair in 1918.)

Road crossing	33 14 56.0	82 38 17.5	.....
Intersection of railroad tangents, angle 9°	33 14 17.9	82 37 23.1	6,012
Overhead-highway crossing	33 13 54.0	82 37 03.7	2,925
Farm-road crossing	33 13 48.3	82 36 26.8	3,191
Gibson, street crossing at	33 13 51.7	82 35 46.5	3,439
Gibson station, 85 feet east of, 10 feet northwest of switchstand, 17 feet north of center of track; iron post stamped "Prim. Trav. Sta. No. 152, 1918 Mac.;" azimuth to Methodist Church spire, 128°01′ 15″	33 13 50.3	82 35 36.7	841
Second-class road crossing	33 13 07.9	82 34 45.1	6,127
Creek crossing	33 12 47.5	82 34 29.3	2,464
Public-road crossing under railroad, about center of trestle	33 12 06.6	82 33 40.5	5,850
Second-class road crossing	33 11 54.2	82 33 13.5	2,610
Road crossing	33 11 36.8	82 32 44.3	3,045
Road crossing	33 11 27.4	82 32 16.2	2,564
Avera station, on Augusta Southern R. R., about 100 feet west of road crossing	33 11 37.8	82 31 40.0	3,252

Magnetic declination for quadrangle, 1° 21′ E.

Northeast along Augusta Southern R. R. (By E. L. McNair in 1918.)

Second-class road crossing	33 09 02.5	82 44 42.4	.....
Chalker station, road crossing	33 09 40.8	82 44 07.5	4,872
Bridge over Ogeechee River: center of truss	33 10 23.1	82 44 06.6	4,279
Agricola station; public-road crossing	33 11 40.8	82 43 15.9	8,956
Public-road crossing	33 12 34.1	82 42 54.6	5,688
Mitchell station; public-road crossing	33 13 10.8	82 42 13.4	5,096
Mitchell station, 675 feet northwest of, 15 feet southwest of center of track, opposite switch stand, set nearly flush with surface; iron post stamped "Prim. Trav. Sta. No. 150, 1918 Mac.;" azimuth to Methodist Church spire, 69° 59′ 30″	33 13 16.4	82 42 09.2	675
Public-road crossing	33 13 35.9	82 41 53.0	2,400
Second-class road crossing	33 13 58.8	82 41 22.1	3,494
Long trestle, north end of	33 14 44.2	82 40 39.9	5,822

Magnetic declination for quadrangle, 1° 20′ E.

AGRICOLA QUADRANGLE—Continued.

From Warthen to Fenn's Bridge. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads	33 05 15.6	82 44 15.5	
Second-class T road north	33 05 05.9	82 42 58.8	6,597
Second-class road north	33 04 40.2	82 41 36.3	7,492
Forks of road near Downs Church, 55 feet west from milestone 8.	33 04 05.3	82 40 33.2	6,428
Second-class road south	33 03 53.0	82 39 56.6	3,355
Second-class road north	33 03 48.7	82 39 13.4	3,705
Forks of road south	33 03 17.2	82 38 20.3	5,529
Forks of road	33 02 44.7	82 37 01.8	7,454
T road N. 56° W	33 02 30.0	82 36 31.0	3,013
Davisboro, about 5 miles north of, on road to Gibson, about 300 feet north of crossing of Ogeechee River, 15 feet southeast of center of road, 220 feet from north end of bridge; iron post stamped "Prim. Trav. Sta. No. 151, 1918 Mac."	33 02 43.0	82 36 13.0	2,022

From Fenn's Bridge to Gibson.

Second-class T road east	33 04 35.6	82 34 54.9	13,185
Grange, crossroads at	33 04 54.4	82 34 44.2	2,110
Second-class road southwest	33 05 04.6	82 35 39.7	4,832
Second-class road northeasterly through gate	33 05 52.9	82 36 02.0	5,239
Settlement road westerly	33 06 11.8	82 36 10.9	2,054
Settlement road west through gate	33 06 47.8	82 36 32.8	4,083
Jefferson-Glasscock county line, 330 feet south of settlement road east; center of road	33 07 25.4	82 36 44.8	3,936
Forks of road	33 07 57.2	82 37 50.2	3,251
T road east	33 08 31.7	82 37 11.4	3,918
Forks of road	33 09 41.7	82 37 36.0	7,378
Do	33 10 06.5	82 36 51.8	4,528
Joe's Creek, center of crossing at	33 11 03.0	82 36 47.0	5,721
Forks of road, 85 feet north of road west	33 12 00.0	82 36 29.9	5,947
Forks of road	33 12 56.3	82 36 10.8	5,913
Second-class road west	33 13 19.8	82 35 59.6	2,569
Gibson, public street crossing Augusta Southern R. R.; iron post stamped "Prim. Trav. Sta. No. 152, 1918, Mac."	33 13 51.7	82 35 46.5	3,412
Creek crossing	33 14 23.0	82 44 17.2	
Mitchell station, "Prim. Trav. Sta. No. 150, 1918, Mac." (previously described)	33 13 16.4	82 42 09.2	12,795

Magnetic declination near east edge of quadrangle, 1° 13′ E.

ALAPAHA QUADRANGLE.

From center of east border of quadrangle southwest along Georgia & Florida Ry. to Willacoochee. (Part of unchecked spur line. By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	31 22 06.9	83 00 19.0	
Road crossing at sawmill	31 21 34.4	83 00 44.5	3,966
Towanda, road crossing at	31 21 18.8	83 01 10.1	2,720
Center of trestle	31 20 44.0	83 02 07.3	6,080
Road crossing	31 20 37.0	83 02 18.6	1,200
Willacoochee, crossing of Atlantic Coast Line and Georgia & Florida railroads	31 20 19.4	83 02 29.3	2,008
Willacoochee (U. S. C. & G. S. b. m. A 7) (No description or position determined for this bench mark by U. S. C. & G. S.)	31 20 22.8	83 02 38.8	890

ALTAMAHA QUADRANGLE.

Southwest along highways. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tyson's crossroads	31 56 19.8	82 01 15.1	
Crossroads	31 55 18.2	82 02 06.3	7,629
Do	31 54 39.8	82 02 48.6	5,324
Road fork	31 54 16.0	82 03 21.8	3,736
Do	31 53 45.9	82 03 52.2	4,015
Center of bridge	31 53 22.8	82 04 09.1	2,757
Road fork	31 53 06.8	82 04 39.9	3,106
Center of bridge	31 52 16.7	82 05 52.7	8,067
Stafford's Ferry over Altamaha River, on north bank, 100 feet east of ferry landing, iron post stamped "Prim. Trav. Sta. No. 33, J 1918"; azimuth to nail in blaze on water oak, 4 feet above ground, distant 195.5 feet, 147° 38′ 15″	31 51 40.2	82 06 01.0	3,759
Road forks, 1,000 feet west of house	31 50 45.2	82 07 06.0	7,892
T lane southwest on Carter farm	31 50 04.4	82 05 21.1	9,948
Five Mile Creek; north end of bridge over	31 49 32.1	82 04 53.6	4,030
Second-class fork at corner of fence	31 49 03.0	82 04 47.7	2,987
Crossroads, 400 feet south of cabin, 0.25 mile northeast of sawmill	31 48 19.0	82 04 44.2	4,452
Forks of road at graveyard west of creek	31 48 03.4	82 05 53.3	6,162
Forks of road at mail box east of sawmill	31 47 55.2	82 06 18.7	2,343
Forks of road 80 feet east of store	31 47 36.6	82 06 39.3	2,594
T road south at house	31 47 28.8	82 07 02.3	2,128
Crossroads at still	31 47 22.0	82 07 36.5	3,035
Road fork north, at southeast corner of field, milepost 14	31 47 27.6	82 08 08.3	2,805
Surrency, 5 miles north of, at west end of lane and T road east, on west side of north-south road, 50 feet southwest of house, 400 feet north of cemetery, at five mail boxes; iron post (not stamped) Prim. Trav. Sta. No. 38, 1918 H	31 47 24.7	82 09 22.8	6,437
Fork south, 600 feet southwest of house	31 47 18.9	82 10 23.4	5,262
Crossroads	31 47 25.1	82 10 43.0	1,797
Do	31 47 29.0	82 12 06.4	7,210
Road fork just east of creek	31 47 44.8	82 13 31.2	7,490
Road fork north at southeast corner of field, 200 feet east of milepost 8	31 47 36.6	82 13 45.4	1,485
Road fork south at house	31 47 10.2	82 14 14.8	3,677

Magnetic declination southwest along highways, 1° 03′ E.

Northeast along highways near west border of quadrangle.

Elliott, 1.3 miles northeast of, in southeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 41, 1918 H"; azimuth to north gable of red-roofed house 1,000 feet southeast, 328° 06′	31 52 08.3	82 14 25.5	
Fork west to house	31 52 29.6	82 14 10.7	2,504
Road opposite gray church	31 52 33.8	82 13 29.6	3,562
Crossroads	31 52 44.3	82 12 50.0	3,580
Do	31 53 10.2	82 11 21.4	8,074
Tillman Ferry, 1 mile south of, near fork in road; milepost	31 53 21.4	82 10 35.6	4,106
Tillman Ferry, well at south landing	31 54 06.7	82 10 12.8	4,983
Old sawmill site, 300 feet east of, on west side of road, oak is 10 feet northwest, blazed gum is 15 feet south	31 54 40.6	82 10 52.6	4,840
Altamaha, 0.25 mile west of, at fork to Tillman Ferry, in stump at south side of river road; copper nail; reference mark, nail in blazed pine 15 feet southeast	31 56 23.6	82 10 49.9	10,410
Altamaha, 300 feet northwest of; road fork	31 56 20.4	82 10 41.9	761
Road fork 500 feet west of house	31 57 13.1	82 10 15.7	5,790
Road fork 150 feet northeast of house	31 58 00.5	82 10 29.1	4,921
Four corners 200 feet west of house	31 58 10.9	82 11 01.2	2,961
Road fork 200 feet northeast of painted house	31 58 47.7	82 11 08.2	3,769
Road fork at house	31 58 54.8	82 11 18.4	1,136
Road opposite church	31 59 30.8	82 11 29.9	3,765

Magnetic declination near west border of quadrangle, 1° 05′ E.

AONIA QUADRANGLE.

Along highways near east border of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road south	33 44 50.2	82 31 11.0	.....
Three corners at store	33 44 33.3	82 32 14.3	5,607
Lincoln triangulation station of U. S. C. & G. S., about 1 mile from county line, in Samuel's militia district No. 184. On highest part of mountain known both as Lincoln and Grave Mountain, heavily wooded, and line had to be opened to station. Best path up mountain is from south end, around solid rocky cliffs 50 to 60 feet high, about 200 meters south of station. C. B. Ross, manager of property, lives 1.25 miles from station. Station mark: Drilled in solid rock on highest part of mountain, 1 inch in diameter 6 inches deep, with triangle cut around it. For reference marks similar holes are made in three large boulders at the following distances: Signal station 0° 00′ 41″ hole number 1, 19.683 m. from station; number 2, 8.420 m. 276° 41′ 30″; number 3, 12.685 m., 350° 35′ 10″	33 44 23.45	82 31 38.66	.....
Second-class road south to house	33 43 17.6	82 30 46.7	.....
Road forks 40 feet west of bridge	33 43 05.6	82 30 16.6	2,820
Road forks near schoolhouse	33 32 46.6	82 30 32.2	.....
Crossroads	33 32 24.8	82 30 36.1	2,212
Do	33 31 09.2	82 30 11.7	7,922
T road west	33 30 35.4	82 30 06.1	3,457

Magnetic declination for east border of quadrangle, 0° 45′ E.

APPLING QUADRANGLE.

Along highways in southeast corner of quadrangle. (By B. H. Yoakum in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Little Kiokee Creek, center of bridge over	33 31 32.8	82 15 11.2	.....
Appling, 2 miles east of, intersection of Augusta-Appling road and Louisville-Appling road	33 31 48.0	82 17 05.7	9,815
T road west	33 30 16.6	82 16 53.0	9,298

Along highways near east border of quadrangle.

Road forks at mail box 78	33 32 36.7	82 16 32.7	.....
Road forks at mail boxes 74 and 75	33 32 50.6	82 15 45.5	4,235
Lamkin Grove Church, T road west	33 34 03.0	82 15 06.3	8,033
Old Delph post office, 800 feet west of; T road south	33 34 22.2	82 15 01.7	1,985
Carrie Tramwell's store, crossroads at	33 38 45.7	82 15 15.5	.....
T road west at angle in main road	33 39 23.2	82 15 38.6	4,270
Road forks	33 40 41.3	82 15 47.9	7,931
Lockhart Ferry over Little River, at east landing of; anchor iron in center of road	33 41 11.4	82 16 02.2	3,276
Center of road opposite residence at summit of ridge	33 42 20.7	82 16 10.2	7,037
Kilkrase Ferry, 2 miles west of; T road east	33 43 15.6	82 17 15.6	7,828
Road fork northwest, 55 feet east of another road fork	33 43 28.1	82 16 20.0	4,858
Kilkrase Ferry, 0.9 mile west of, at sharp bend in road, 150 feet northwest of well on south side of road, 15 feet north of center of main road, in angle between main road and second-class road forks; iron post stamped "Prim. Trav. Sta. No. 24, 1918 Y"	33 43 39.6	82 15 17.7	5,393
Camp-meeting ground three corners, 5 miles northwest of	33 30 32.2	82 24 06.1	.....

Magnetic declination along east border of quadrangle, 1° 16′ E.; along south border of quadrangle, 1° 12′ E.

Along highways near north border of quadrangle. (By G. T. Hawkins in 1918.)

Entrance to white house on southwest side of road	33 43 43.2	82 17 57.0	.....
Crossroads	33 44 13.6	82 18 38.5	4,664

APPLING QUADRANGLE—Continued.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Bridge	33 43 12.0	82 29 26.6	.....
Crossroads	33 43 09.2	82 29 00.7	2,200
Loco, 0.3 mile south of; crossroads	33 43 00.0	82 28 49.1	1,357
Crossroads	33 42 11.9	82 29 06.8	5,087
Lodge Creek, bridge over	33 41 30.9	82 28 56.9	4,233
Amity, crossroads at (tie point Bulletin No. 245, p. 27)	33 40 32.7	82 29 24.1	6,310
Crossroads at top of hill	33 40 00.2	82 29 31.0	3,310
Second-c'ass road forks at house	33 38 53.3	82 28 44.3	7,835
Center of steel bridge, new approach	33 38 38.2	82 28 37.9	1,625
Amity, 3.5 mi'es south of, 50 feet north of road forks, on east side of north and south road; iron post stamped "Prim. Trav. Sta. 36, 1918 H"	33 37 45.6	82 28 30.0	5,363
Rayville, 0.25 mile south of; road forks	33 37 17.8	82 28 50.4	3,302
Crossroads	33 36 36.5	82 29 16.2	4,708
Bridge	33 35 16.0	82 29 51.9	8,684
Crossroads at old house	33 33 54.5	82 29 40.7	8,295
Road forks	33 33 29.1	82 29 47.1	2,633

Along highways through center of quadrangle.

Bridge	33 37 38.4	82 28 13.6	.....
T road south	33 37 06.8	82 26 52.5	7,565
Crossroads	33 36 24.9	82 25 48.4	6,881
T road south	33 35 50.2	82 25 05.7	5,043
Road forks	33 35 51.4	82 24 33.4	2,740
Winfie'd, T road north at	33 36 21.5	82 23 49.7	4,785
Winfield, 0.5 mile east of; road forks	33 36 16.0	82 23 17.8	2,763
Old Cluese post office, 60 feet northwest of, at crossroads, 15 feet north of east and west road, 15 feet west of north and south road; iron post stamped "Prim. Trav. Sta. No. 37, 1918 H"	33 36 42.8	82 21 24.1	9,932
T road south	33 36 36.1	82 20 44.0	3,456
Phinizy, crossroads at	33 36 38.4	82 19 37.3	5,665
Negro house on north side of road, entrance to	33 37 06.0	82 17 43.1	10,055
Old Hazen post office, crossroads at	33 37 15.1	82 16 30.3	6,221
Road forks near old house	33 37 05.5	82 15 11.4	6,749

Magnetic declination for north border of quadrangle, 0° 40′ E.; for west border of quadrangle, 0° 45′ E.; through center of quadrangle, 1° 00′ E.

AUGUSTA QUADRANGLE.

Along Charleston & Western Carolina R. R. from Augusta southeast. (By E. L. McNair in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Augusta, road crossing, in Charleston & Western Carolina Ry. yard	33 27 21.9	81 57 15.5	.....
Road crossing	33 27 00.3	81 56 16.1	5,483
Crossing of levee	33 26 41.4	81 55 27.9	4,514
Savannah River bridge, center of swing span	33 26 07.1	81 54 52.1	4,605

On Savannah River. (By B. H. Yoakum in 1918.)

Augusta, on first stone pier from Georgia side of the Southern R.Y. bridge; bench mark No. 1 of the U. S. Corps of Engineers	33 28 36.5	81 57 35.9	.....

AUGUSTA QUADRANGLE—Continued.

Along Georgia & Florida Ry. from Augusta southwest. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Augusta post office triangulation station of the U. S. C. & G. S., tower of Augusta post office; center of iron staff. Tower is on northeast corner, is of brick, and has a spiral iron staircase in the center; iron staff is in flag pole, which was cut off 8 feet above concrete floor; an eccentric station was made outside of the iron house and back from the pole; eccentric station is 1.701 meters distant from center of pole	33 28 25.52	81 58 08.0	.....
Augusta; intersection of Greene and Center streets	33 28 19.1	81 57 45.7	1,995
Augusta; crossing of Gwynette Streets	33 27 41.7	81 58 06.6	4,181
Augusta Belt Line R. R., crossing of	33 26 59.5	81 59 09.4	6,815
Road crossing, 20 feet southwest to post marked "A 2.5"	33 26 14.3	81 59 48.5	5,644

Along Central of Georgia Ry. from Augusta to McBean.

Milepost 131, railroad track opposite	33 27 23.6	81 58 34.5	.....
Belt Line R. R., crossing of	33 26 48.1	81 58 57.5	4,082
Milepost 129, road crossing at	33 25 51.4	81 59 28.0	6,280
Milepost 128, railroad track opposite	33 25 01.2	81 59 47.6	5,333
Milepost 127, second-class road crossing at	33 24 08.7	81 59 43.0	5,324
Westover station, road crossing at	33 23 40.1	81 59 26.6	3,205
Top of hill, road crossing at; 30 feet southeast to crossing sign	33 22 50.8	81 58 56.6	5,600
Railroad station (no name), railroad crossing at	33 22 21.2	81 58 38.7	3,350
Milepost 124, second-class road crossing 400 feet north of	33 21 52.5	81 58 21.3	3,260
Milepost 123, railroad track opposite	33 21 02.4	81 57 50.9	5,680
Allen station, 70 feet north of, 10 feet west of west rail, opposite switch stand at south end of siding; iron post stamped "Prim. Trav. Sta. No. 3, 1918 H"; azimuth to point 2,700 feet southeast on west rail, 332° 45′ 33″	33 20 12.0	81 57 20.4	5,710
Private-road crossing 230 feet south of milepost 121	33 19 26.8	81 58 52.9	5,131
Milepost 120, railroad track opposite	33 18 47.6	81 56 16.3	5,041
Tahoma station, road crossing at	33 18 33.3	81 55 35.9	3,722
Milepost 118, railroad track opposite	33 17 43.2	81 54 46.7	6,571
Milepost 117, railroad track opposite	33 17 01.3	81 54 11.0	5,208
Overhead road crossing	33 15 54.7	81 53 37.3	7,314
Milepost 115, railroad track opposite	33 15 43.6	81 54 04.7	2,581
Milepost 114, railroad track opposite	33 15 35.1	81 55 05.8	5,250
Milepost 113, railroad track opposite	33 15 17.5	81 56 05.0	5,330

Along Georgia R. R. from Augusta westward.

Milepost 1, railroad track opposite	33 28 08.3	81 58 56.2	.....
Road crossing at bend in road to Camp Hancock	33 27 54.5	81 59 32.8	3,400

BAXLEY QUADRANGLE.

Northwest along Northern Branch of Atlanta, Birmingham & Atlantic R. R. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Coffee, road crossing	31 30 26.1	82 18 41.2	.....
Road crossing	31 30 36.9	82 19 24.0	3,871
Do	31 30 52.0	82 20 39.6	6,716
Do	31 31 38.4	82 21 08.7	5,327
New Lacy, road crossing	31 32 41.8	82 22 16.0	8,664
Road crossing	31 32 44.8	82 22 50.8	3,020
Do	31 32 50.8	82 24 00.8	6,090
Rockingham, road crossing	31 32 51.2	82 24 56.2	4,792
Road crossing	31 32 52.7	82 25 30.1	2,940
Do	31 32 48.0	82 26 23.5	4,641
Trestle, east end of	31 32 34.0	82 26 53.9	2,990
Road crossing	31 32 26.6	82 27 20.7	2,425
Alma, 300 feet west of station, 30 feet south of track; iron post stamped "Prim. Trav. Sta. No. 19"	31 32 33.4	82 28 09.3	4,265
Milepost 75, opposite	31 32 47.2	82 29 41.2	8,077

BLACK LAKE QUADRANGLE.

Along railroad and highways near west border of quadrangle. (By C. B. Kendall and C. W. Arnold in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Mount Pleasant Church, 150 feet south of, in northwest corner of crossroads; oak tree	32 58 57.4	83 14 48.4	.....
Stream crossing	32 56 38.5	83 14 45.0	.....
H. H. Huffs R. F. D. box, center of road forks opposite	32 50 10.4	83 14 34.7	.....
Branch crossing road	32 49 03.8	83 14 39.8	6,749
Crossroads, center of	32 48 15.4	83 13 12.7	8,903

Along highways and railroad in south part of quadrangle.

Branch crossing road	32 48 28.2	83 11 44.4	7,642
Road forks, center of road at	32 48 42.7	83 11 06.7	3,537
Irwinton, northeast of court house, center of crossroads	32 48 39.1	83 10 25.3	3,551
Irwinton railroad, at intersection with the Irwinton-Toomsboro public road	32 48 48.8	83 10 10.6	1,587
Oscar Walters R. F. D. box, in triangle at road forks south	32 48 32.9	83 08 25.6	9,107
Road forks, intersection of Toomsboro and Balls Ferry roads	32 48 34.7	83 07 06.1	6,785
Road forks, center of small triangle at road north	32 47 53.5	83 05 55.4	7,331
Road forks, farm road south	32 47 19.3	83 05 40.1	3,695
In triangl at road forks, 35 feet southeast of 15-inch pine tree; iron post stamped "Prim. Trav. Sta. No. 4, 1916"	32 46 27.9	83 04 57.5	6,340
I. C. Stubbs's R. F. D. box at road forks, center of road opposite	32 46 54.3	83 04 16.8	4,382
Ham Creek, center of wagon bridge over	32 48 19.9	83 04 43.2	8,940
Toomsboro, Mill Street crossing of Central of Georgia Ry	32 49 35.7	83 04 48.0	7,665
Central of Georgia Ry., opposite mile post 153; center of track	32 49 14.7	83 03 15.4	8,184
Central of Georgia Ry., opposite mile post 152; center of track	32 49 23.4	83 02 14.4	5,277
Beech Hill station, 20 feet west of, center of track at road crossing	32 49 14.4	83 00 36.3	8,424

Along highways near south border of quadrangle.

Wagon bridge over branch, center of	32 47 56.8	83 14 29.0	.....
Bethel Church, three corners northwest of, 15 feet west to three mail boxes in triangle	32 46 20.8	83 14 25.4	.....
Bethel Church, 0.5 mile southeast of, at T road northeast, 20 feet north and 25 feet west of center of triangle; iron post stamped "Prim. Trav. Sta. No. 17, 1916"	32 45 57.1	83 13 49.4	3,891
Gate at private road leading to house	32 46 19.2	83 12 25.2	7,526
Three corners, at public T road north, 10 feet northeast to center of of triangle	32 46 11.0	83 11 41.1	3,859
Big Sandy Creek, at Thompson's Bridge; center of bridge	32 46 34.1	83 10 53.5	4,681
T road west, at west edge of Irwinton-Dublin road; large oak tree	32 46 21.7	83 10 08.6	4,032
Big Sandy Creek, 900 feet south of bridge over; forks of road, 30 feet west to oak tree, 70 feet north to old railroad track	32 45 50.1	83 10 04.2	3,216
Small stream	32 45 10.6	83 09 44.9	4,321
Big Sandy Creek, about 0.75 mile northeast of the "Outlaw Bridge" over, 25 feet north to mail box, 20 feet southwest to three-pronged water oak; four corners	32 45 18.9	83 06 55.3	3,917
Schoolhouse, 120 feet southwest of, on west edge of Irwinton road, 60 feet north of intersection with road northeast to Toomsboro; live-oak tree	32 45 41.8	83 05 57.5	5,452
Center of main road at public T road northwest, 20 feet northwest to center of triangle	32 46 18.9	83 05 10.1	5,521

Along highways near east border of quadrangle.

C. W. Kines's R. F. D. box, at road forks; center of road opposite	32 55 36.8	83 00 34.2	.....
Floyd Turner's R. F. D. box, at road forks	32 56 13.0	83 01 24.8	5,660
Poplar Spring Church, 50 feet due south of center of, 30 feet due west of 24-inch oak tree; iron post stamped "Prim. Trav. Sta. No. 6, 1916"	32 58 11.5	83 00 26.1	12,984
Road forks, center of, at farm road west	32 59 20.6	83 00 23.4	6,986

BLACK LAKE QUADRANGLE—Continued.

Along highways in north part of quadrangle (checked spur line).

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks south	32 58 22.8	83 01 14.0	
Bluff Creek, center of iron bridge over	32 58 28.2	83 01 45.2	2,711
Charles Fowler's store, intersection of roads at	32 58 39.2	83 02 31.5	4,101
Gum Creek, center of bridge over	32 58 49.5	83 03 08.4	3,308
Cross roads, 0.6 mile northwest of Gum Creek bridge	32 59 09.1	83 03 39.8	3,327
Ben Travick's farm, at end of lane, 60 feet from east bank of Oconee River, 40 feet north of twin sweet-gum tree, 20 feet east of chinaberry tree; iron post stamped "Prim. Trav. Sta. No. 7, 1916"	32 57 13.9	83 04 46.8	12,964

Along highways near south border of quadrangle.

Road forks, road north	32 46 39.5	83 03 02.2	
Road forks, road south, 5 mail boxes on wheel just east of fork	32 46 19.6	83 02 37.4	2,929
Road forks, road south	32 46 12.4	83 01 44.0	4,624
Four corners	32 46 10.8	83 01 16.0	2,398
Road fork, 155 feet west of; iron post stamped "Prim. Trav. Sta. No. 9, 1916"	32 46 16.5	83 00 33.8	3,654

Along highways through center of quadrangle.

Commissioner Creek, center of steel truss bridge over	32 49 52.4	83 04 47.1	
Road forks, road southeast	32 50 15.8	83 04 10.8	3,901
Road forks, road southwest	32 51 43.2	83 05 06.3	10,014
Road forks, road north	32 52 33.9	83 05 52.6	6,469
In east corner of intersection of Toomsboro and River roads; iron post stamped "Prim. Trav. Sta. No. 8, 1916"	32 52 13.8	83 06 44.8	4,901
Road forks, road northwest	32 53 45.9	83 07 47.2	10,715
Stubbs's store, 200 feet east of T road north	32 54 06.8	83 07 15.6	3,421
Hayes Creek, center of	32 55 27.4	83 07 53.5	8,764
Ennis Pond, center of main bridge over outlet of; north end	32 56 27.3	83 09 20.2	9,549
Road forks, road west	32 57 49.7	83 10 20.4	9,777
Black Creek, 400 feet north of bridge over, at second-class T road east, in center of triangle; iron post stamped "Elev. 253, 1916"	32 58 19.0	83 10 28.8	3,040
Private road east	32 59 23.6	83 11 05.4	7,235
Four corners	32 58 29.0	83 12 55.1	10,850
Road forks, roads north and west	32 58 44.8	83 13 55.2	5,359

Magnetic declination for north, east, and south borders of quadrangle, 1° 20′ E.; for west border of quadrangle, 1° 30′ E.; through center of quadrangle, 1° 20′ E.

BLADEN QUADRANGLE.

From Brunswick northwest along Southern Ry. to Southern Junction. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Brunswick, Dent's shipyard; road crossing	31 09 44.2	81 30 01.2	
Greenwood cemetery, road crossing; center of track	31 10 12.4	81 30 11.5	2,990
Dixie highway crossing; center of track	31 10 27.3	81 30 15.0	1,529
Road crossing; center of track	31 10 55.8	81 30 15.3	2,883
Dick Junction, 400 feet north of Dixie highway crossing	31 12 04.1	81 30 23.3	6,933
Center of trestle	31 12 59.6	81 30 43.6	5,879
Southern Junction, 20 feet east of track, 100 feet north of station; iron post stamped "Prim. Trav. Sta. No. 1. Elev., 24"	31 13 39.0	81 30 57.7	4,420
Southern Junction, crossing of Atlanta, Birmingham & Atlantic R. R. and Southern Railway	31 13 42.6	81 30 59.3	396
Center of small trestle	31 14 30.2	81 31 24.7	5,289

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BLADEN QUADRANGLE—Continued.

Along Atlanta, Birmingham & Atlantic R. R. near Southern Junction.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Center of trestle	31 14 18.0	81 31 34.4	.....
Road crossing	31 14 35.0	81 31 58.3	2,695

From Bladen south along Seaboard Air Line Ry. to White Oak.

Bladen, crossing of Seaboard Air Line and Atlantic Coast Line railroads	31 14 40.6	81 42 08.3	.....
Bladen, 450 feet south of station, 50 feet west of road crossing, 529 feet south and 164 feet west of crossing of Seaboard Air Line and Atlantic Coast Line is 16 feet west of stock pen; bench mark post stamped "16"	31 14 35.3	81 42 10.2	.....
South end of trestle	31 13 41.1	81 42 23.0	.....
Road crossing	31 12 47.8	81 42 36.3	5,510
Do.	31 11 55.0	81 42 49.4	5,450
South end of trestle	31 11 23.7	81 42 57.1	3,230
Road crossing	31 10 17.2	81 43 13.6	6,870
Station 1310	31 10 13.3	81 43 14.5	400
Road crossing	31 09 43.3	81 43 22.0	3,100
Old railroad crossing	31 09 07.2	81 43 26.2	3,671
Glencoe road crossing	31 08 07.8	81 43 29.6	6,000
South end of trestle	31 07 05.4	81 43 33.2	6,320
Point of switch	31 06 18.9	81 43 35.9	4,700
Waverly, road crossing, junction of line to Tharin and line west	31 05 49.7	81 43 37.5	2,954
Waverly, 70 feet west of station, 25 feet north of road, 4 feet southwest of fence corner; bench mark post stamped "20—1917"	31 05 41.7	81 43 39.1	.....
Point of spur	31 04 49.4	81 43 41.0	.....
Road crossing	31 04 21.0	81 43 42.6	2,870
Center of small trestle	31 03 19.4	81 43 46.2	6,230
Road crossing	31 02 38.5	81 43 48.5	4,140
White Oak, road crossing at junction of line to Burnt Fort	31 01 54.8	81 43 51.1	4,418
White Oak, 0.7 mile southwest of, at road forks	31 01 47.8	81 44 30.5	3,504

From Waverly southeast along highway to Tharin Dover Bluff. (Spur line unchecked, positions unreliable.)

Road forks	31 05 48.3	81 43 25.7	.....
Do.	31 05 19.2	81 42 54.7	3,992
Do.	31 04 47.9	81 42 09.4	5,053
Crossroads	31 04 32.0	81 41 34.6	3,425
Do.	31 04 15.1	81 40 55.6	3,793
Road forks at three mail boxes	31 03 53.8	81 39 53.3	5,828
Road forks at four mail boxes	31 03 38.2	81 39 05.7	4,432
Road forks	31 03 26.4	81 38 28.7	3,434
Crossroads	31 03 20.4	81 38 04.9	2,150
Do.	31 03 24.1	81 36 54.7	6,121
Road at house	31 02 54.2	81 36 39.5	3,300
Road fork	31 02 34.5	81 36 34.7	2,028
Artesian well	31 02 08.2	81 35 46.5	4,962
Road forks	31 01 56.8	81 35 15.9	2,900
Do.	31 01 52.5	81 34 55.8	1,798
Road forks at road through gate	31 01 33.0	81 34 34.0	2,740
Road forks	31 01 13.8	81 34 14.3	2,587
Do	31 01 20.7	81 33 20.7	4,741
Do	31 01 32.9	81 32 49.9	2,951
Do	31 01 42.8	81 32 14.5	3,241
Do	31 01 32.6	81 31 49.5	2,407
Dover Bluff, at south end of, 7 mail boxes; iron post stamped "Prim. Trav. Sta. No. 10, 1917"	31 01 05.8	81 31 42.1	2,783

Near Bladen on Atlantic Coast Line R. R.

Bladen, 1.2 miles west of; road crossing	31 14 29.1	81 43 28.8	.....
West abutment of trestle	31 14 21.2	81 44 24.0	.....

BLADEN QUADRANGLE—Continued.

From Seaboard Air Line Ry. east along highways through center of quadrangle. (Unchecked spur line, positions unreliable.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks	31 10 15.6	81 42 30.8	.....
Road south	31 09 55.5	81 41 41.0	4,778
Road forks	31 09 40.8	81 40 51.8	4,528
Crossroads	31 09 15.9	81 40 02.7	4,952
Road forks	31 08 49.3	81 39 21.2	4,496
Crossroads	31 08 36.8	81 38 57.0	2,450
Center of bridge	31 08 12.8	81 38 01.3	5,419
Springhill Church, 60 feet southwest of, 30 feet northeast of center of road forks; bench-mark post stamped "29—1917"	31 08 00.4	81 37 26.7	3,252
Center of bridge	31 08 03.9	81 36 01.6	7,406
Fancy Bluff, 2 miles west of, 60 feet southeast of road fork, bench-mark post stamped "18—1917"	31 08 25.9	81 35 17.1	4,467
Road fork	31 08 27.8	81 34 20.6	4,920
Do	31 08 22.1	81 33 55.4	2,264
Fancy Bluff, at water's edge; center of pier	31 08 15.2	81 33 21.5	3,024

BOULOGNE QUADRANGLE.

Along highways in north part of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks, road southwest to Newell, road southeast to Burnt Fort	30 58 46.3	81 57 18.9	.....
Road forks, road southwest to Newell	30 58 20.0	81 56 54.6	3,398
Road forks, 15 feet west of point of angle	30 58 03.4	81 56 19.9	3,454
Second-class crossroads	30 57 49.2	81 55 50.2	2,954
Road forks, 70 feet west of angle in wire fence	30 57 03.6	81 51 42.0	7,517
Burnt Fort, on west side of Satilla River, 260 feet northwest of ferry landing, 4 feet south of wire fence, in open ground: iron post stamped "Prim. Trav. Sta. No. 36, 1917 Mac"	30 56 49.0	81 53 59.3	3,997
Burnt Fort, on east side of Satilla River at ferry; top of iron pipe extending 4 feet out of ground	30 56 45.5	81 53 52.1	725

Along highways in north part of quadrangle. (By Oscar Jones in 1917.)

Road forks through gate in wire fence	30 59 59.4	81 48 13.6	.....
Small bridge, center of	30 59 41.1	81 48 12.0	1,849
Road forks	30 59 11.3	81 49 09.2	3,021
Bridge, center of	30 58 38.8	81 48 15.9	3,340
Road forks, White Oak (?), Owen Ferry (?), and Burnt Fort	30 58 12.2	81 48 32.2	3,035
Road forks	30 58 17.4	81 49 08.6	3,214
Do	30 58 27.9	81 50 10.0	5,436
Crossroads	30 58 42.0	81 50 45.6	3,415
Road forks, 900 feet east of mid-river	30 58 26.4	81 51 54.9	6,231
Crossroads	30 58 19.0	81 52 15.0	1,904
Road forks at small stream, west side	30 57 55.2	81 52 49.2	3,827
Road forks, 80 feet southwest of L. F. Godley's mail box	30 57 04.8	81 53 19.1	5,716
Burnt Fort, 100 feet southeast of B's store, at road fork, 30 feet south of water tank; iron post stamped "Prim. Trav. Sta. No. 9"	30 56 58.0	81 53 32.6	1,362
End of McNair's line, station 1166	30 56 45.5	81 53 52.1	2,120

Magnetic declination near north border of quadrangle, 1.0° E.

BOULOGNE QUADRANGLE—Continued.

From Folkston east along highways across country to Colesburg. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Folkston, U. S. C. & G. S. bench mark (described in Folkston quadrangle)	30 49 52.4	82 00 29.3	
Road forks	30 49 58.3	81 59 49.2	3,550
Angle in road (10.5°)	30 50 03.9	81 59 23.0	2,349
Cross roads, 650 feet southwest of road forks	30 50 26.0	81 58 26.8	5,389
Angle in road (2°)	30 50 43.3	81 51 42.7	4,220
Intersection of road tangents, about 20 feet north of bend in road	30 51 12.2	81 56 21.8	7,629
Angle in road	30 51 05.4	81 56 00.4	1,985
Do	30 50 56.4	81 55 30.5	2,752
Camden-Charlton county-line crossing, about 640 feet west of gate at private road leading to Lewis Manufacturing Co. gum distillery on St. Marys River: center of road	30 50 00.6	81 54 15.2	8,652
Folkston, 7.6 miles east of, at road forks, one road leading to Kingsland and one to Woodbine, 6 feet west of post with signboard; iron post stamped "Prim. Trav. Sta. No. 50, 1917 Mac.": azimuth of south edge of chimney near center of house, 500 feet distant, 249° 39′	30 50 00.2	81 53 35.6	3,455
Angle in road (33°)	30 51 22.0	81 52 05.9	11,378
Abandoned railroad-bed crossing, 20 feet east of bend 1.0° E. in road, 790 feet west of angle in road	30 51 36.0	81 51 19.3	4,303
Second-class T road north	30 51 55.8	81 50 43.8	3,677
Silco, about 205 feet south of store: crossroads	30 52 03.8	81 49 57.6	4,112
Road forks	30 52 46.0	81 48 52.2	7,115
Angle in road, at second-class road west, opposite large corner fence post and fence line	30 53 19.0	81 48 42.9	3,430
Second-class crossroads	30 54 03.6	81 47 57.2	6,014
Colesburg, 4 miles west of, 100 feet north by 30 feet east of Tompkins's store, at T road corner, road east to Colesburg, 10 feet north of a dim road west: iron post stamped "Prim. Trav. Sta. No. 51, 1917 Mac."	30 54 41.5	81 47 34.2	4,329
Angle in road at long straight road east	30 54 31.5	81 47 10.0	2,343
Angle in road (43°); point is about 20 feet south of bend	30 54 23.3	81 46 08.0	5,460
Small wooden stringer bridge, near 8.5° angle in road	30 54 54.2	81 45 15.0	5,570

Magnetic declination through east part of quadrangle, 1.0° E.

Along highways near south border of quadrangle. (By J. B. Leavitt in 1917.)

Church, center of road opposite	30 48 41.0	81 45 07.0	
Road fork to north, opposite mail boxes marked V. Kennison and P. Cottle, 30 feet west of culvert; center of road	30 48 48.1	81 46 12.1	5,719
Temple Church, opposite north front door of, south of gate to cemetery; center of road	30 48 32.4	81 47 21.4	6,251
Crossroads, at southeast corner of cornfield	30 48 26.2	81 48 10.9	4,364
Crossroads, intersection of Folkston-Kingsland and Kings Ferry-Owen's Ferry roads, 25 feet east of, 30 feet north of pine tree marked with a small cross; point in road	30 48 28.7	81 49 53.6	8,963
Greenville Church, 140 feet south of, large pine tree blazed with a cross: nail in root	30 48 04.3	81 50 02.8	2,586
Kings Ferry, at landing on Georgia side of river; hub	30 47 12.7	81 50 24.1	5,534

Magnetic declination for south border of quadrangle, 0.6° W.

BROOKLET QUADRANGLE.

Northwest along Savannah & Statesboro Ry. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	32 18 48.9	81 30 36.0	.....
Do	32 19 01.3	81 31 20.2	3,990
Do	32 19 11.7	81 31 57.0	3,330
Stilson, 100 feet west of station; road crossing	32 19 31.7	81 33 08.0	6,420
Road crossing	32 19 49.2	81 34 09.3	5,548
Do	32 20 11.5	81 35 06.1	5,370
Arcola, 100 feet east of station; road crossing	32 20 35.8	81 36 08.0	5,850
Road crossing	32 20 48.0	81 36 39.0	2,930
Do	32 21 11.5	81 37 38.9	5,660
Tuckers, road crossing at	32 21 19.8	81 38 00.1	2,000
Road crossing	32 21 53.3	81 39 09.9	6,877
Do	32 22 06.8	81 39 20.0	1,620
Brooklet station, 46 feet north of crossing of Savannah & Statesboro and Shearwood railroads; iron post stamped "Prim. Trav. Sta. No. 12, J 1918"	32 22 42.0	81 39 46.0	4,200
Road crossing	32 23 23.2	81 40 49.7	6,867
Do	32 23 46.5	81 41 34.9	4,530
Grimshaw, road crossing	32 23 57.1	81 41 55.5	2,070
Road crossing	32 24 25.6	81 42 52.8	5,689
Pretoria, 300 feet west of; road crossing	32 24 35.7	81 43 50.0	5,007
Road crossing	32 24 56.6	81 44 30.5	4,069

Southwest and southeast along highways.

North end of trestle bridge	32 29 50.2	81 33 10.9	.....
East end of bridge over Ogeechee River	32 29 41.5	81 33 17.9	1,064
West end of bridge	32 29 41.0	81 33 22.5	394
Road fork	32 29 31.9	81 33 49.7	2,510
Do	32 28 57.2	81 34 39.8	5,543
Crossroads	32 28 49.9	81 35 45.4	5,670
Do	32 28 50.6	81 36 05.4	1,711
Intersection of Statesboro and Oliver and River roads, 3 feet north of three mail boxes; iron post stamped "Prim. Trav. Sta. No. 15, 1918 J"	32 28 19.8	81 36 24.0	3,492
Pauline High School, crossroads at	32 27 58.9	81 36 02.7	2,790
Road fork	32 27 38.1	81 35 39.2	2,910
Do	32 27 23.8	81 35 23.3	1,985
Do	32 27 06.3	81 35 03.7	2,440
Do	32 26 36.3	81 34 53.7	3,148
Do	32 26 27.8	81 34 42.3	1,304
Center of bridge over mill creek	32 26 03.7	81 33 40.9	5,797
Crossroads	32 25 36.0	81 33 33.5	2,873
Road fork	32 24 48.6	81 33 13.8	5,069
Crossing of Midland Ry	23 24 23.0	81 32 55.8	3,013
Crossroads	32 23 44.7	81 32 47.7	3,939
Do	32 23 18.5	81 32 38.9	2,750
Road fork	32 22 30.4	81 32 17.8	5,186
Center of creek	32 22 18.3	81 32 08.9	1,446
Road fork	32 21 58.7	81 31 57.0	2,229
Creek crossing	32 21 35.7	81 31 41.7	2,672
Road fork	32 21 01.2	81 30 58.1	5,108
Crossroads	32 20 51.3	81 30 57.4	1,010
Road fork	32 20 41.0	81 31 39.4	3,752
Crossroads	32 20 11.8	81 32 04.8	3,669
Stilson, 50 feet north of station, 20 feet north of track, 2 feet east of telegraph pole; iron post stamped "Prim. Trav. Sta. No. 12, 1918 J"	32 19 31.5	81 33 07.0	6,721
Stilson, 100 feet west of station; road crossing	32 19 31.7	81 33 08.0	86

Southeast along highways in northeast corner of quadrangle.

Road fork	32 29 54.1	81 38 13.0	.....
Do	32 29 34.4	81 37 43.7	3,210
Crossroads, Statesboro and Halcyondale and River roads	32 29 12.0	81 37 18.7	3,116
Crossroads, Prim. Trav. Sta. No. 15 (previously described)	32 28 19.8	81 36 24.0	7,051

BROOKLET QUADRANGLE—Continued.

East near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations
	° ′ ″	° ′ ″	*Feet.*
Crossroads	32 17 07.2	81 44 37.0	.....
Do	32 17 04.0	81 44 19.9	1,504
Crossing of Shearwood Ry	32 16 46.3	81 43 53.8	2,871
Crossroads at church and school	32 16 26.1	81 43 24.6	3,229
Road fork of Statesboro road	32 16 07.4	81 42 49.1	3,591
Road fork	32 15 45.3	81 42 17.1	3,531
Do	32 15 16.0	81 41 33.3	4,785
Center of bridge over Reed Branch	32 15 10.4	81 41 14.3	1,726

Magnetic declination for northwest, southeast, and southwest parts of quadrangle, 0.3° E.

BROXTON QUADRANGLE.

From point near southeast corner of quadrangle west along Atlanta, Birmingham & Atlantic Ry. near south border to Douglas, thence northeast along Georgia & Florida Ry. to east border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	31 30 02.21	82 45 18.8	.....
Do	31 30 15.0	82 46 19.0	5,363
Do	31 30 21.7	82 46 43.8	2,256
Do	31 30 14.2	82 47 59.7	6,610
Do	31 30 04.2	82 48 40.0	3,625
Do	31 30 04.7	82 49 28.8	4,223
Douglas, crossing of Atlanta, Birmingham & Atlantic and Georgia & Florida railroads	31 30 16.1	82 51 09.4	372
Road crossing, at railroad shop	31 31 08.7	82 51 14.6	5,333
Junction of railroads	31 31 41.2	82 51 12.2	3,289
Road crossing	31 31 54.3	82 51 03.1	1,547
Do	31 32 30.3	82 50 11.5	5,759
Do	31 33 14.0	82 48 54.6	7,996
Do	31 33 20.0	82 48 30.3	2,190
Huffer, road crossing at	31 33 50.4	82 47 40.5	5,301
Road crossing	31 34 28.5	82 46 45.5	6,120
Do	31 35 28.6	82 45 18.8	9,650

BRUNSWICK QUADRANGLE.

From Brunswick north along Georgia Coast & Piedmont R. R. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Brunswick, southeast base, U. S. Coast and Geodetic Survey triangulation station	31 09 26.3	81 29 55.4	.....
Brunswick, water tank, U. S. Coast and Geodetic Survey triangulation station	31 08 59.5	81 29 49.3	.....
Road crossing	31 09 03.1	81 29 17.3	2,804
Do	31 09 36.5	81 29 29.4	3,531
Atlanta, Birmingham & Atlantic Ry. crossing	31 09 54.2	81 29 35.4	1,863
Road crossing	31 10 22.0	81 29 29.6	2,848
Do	31 10 41.7	81 29 24.3	2,041
Do	31 11 15.3	81 29 15.4	3,486
Do	31 11 42.3	81 29 08.2	2,800
Do	31 12 54.3	81 28 49.1	7,458
Do	31 13 30.5	81 28 39.5	3,750
Do	31 14 34.4	81 28 22.5	6,618

CAMP HANCOCK.

Along highways. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
About halfway between mileposts 7 and 8, on north side of railroad, 40 feet toward Augusta from road crossing, 200 feet north of new frame house; iron post stamped "Prim. Trav. Sta. No. 13, 1918 H"	33 27 04.96	82 05 07.13	.....
Road crossing of railroad; center of track	33 26 39.55	82 05 47.74	4,294
Remount station, electric light pole at entrance; copper nail in hub, marked "U. S. P. T. 7"	33 26 22.36	82 06 15.84	2,950
Belair, 25 feet north and 20 feet west of road crossing; iron post stamped "Elev. 309"	33 26 30.64	82 07 16.61	5,217
Pine tree, 18 inches northwest of, in root; copper nail, "U. S. P. T. 1" painted	33 26 14.11	82 08 01.88	4,183
Poplar tree, 15 inches west of, in top of oak stake; nail, marked "U. S. P. T. 2"	33 25 52.84	82 08 01.71	2,150
Forks of road, 275 feet north of, east side of road, in oak stub; copper nail, "U. S. P. T. 3" painted on tree	33 25 31.02	82 08 08.79	2,285
Crossroads, 45 feet southeast of, in root of pine tree, painted "U. S. P. T. 4"; copper nail, pine tree 10 feet east	33 25 00.19	82 08 09.26	3,113
Crossroads, 15 feet west of; iron post stamped "Elev. 478 B"	33 24 55.14	82 08 26.19	1,523
Edge of woods and field, in root of pine tree; copper nail, marked "U. S. P. T. 5"	33 24 30.97	82 07 51.86	3,799
North wagon track, in root of pine tree close to; copper nail, painted "U. S. P. T. 6"	33 24 15.48	82 07 29.22	2,477
Friendship Church, 0.25 mile northwest of, 45 feet northwest of crossroads; iron post stamped "Elev. 445"	33 23 46.00	82 06 54.65	4,180
North side of road, in root of pine tree; copper nail (levelman's t. b. m.) painted "U. S. B. M. 333"	33 24 14.36	82 06 17.60	4,252
Pine tree, in root of; copper nail (levelman's b. m.) painted "U. S. B. M. 232.3"	33 24 37.72	82 05 34.28	4,365
On bridge, in plank (levelman's b. m.) painted on bridge "211.5"	33 24 50.11	82 05 15.36	2,033
Schoolhouse, in front of, in root of pine tree; copper nail (levelman's b. m.) painted "Elev. 246.7"	33 25 02.06	82 05 01.39	1,698
Church, 35 feet south and 50 feet west of, at road corners; iron post	33 25 06.26	82 04 50.32	1,025
Pine tree, in root of (levelman's t. b. m.) painted "298.0"	33 25 33.29	82 04 54.76	2,759
Crossroads	33 26 06.10	82 05 01.66	3,368
Do	33 26 41.76	82 05 09.91	3,676
Iron post stamped "Prim. Trav. Sta. No. 13, 1918 H" (previously described)	33 27 04.96	82 05 07.13	2,357
Remount station 308, electric light pole at road south, 2.5 feet north of; copper nail in hub, painted "U. S. P. T. 7"	33 26 22.36	82 06 15.84	.....
Crossroad	33 26 04.25	82 05 43.36	3,306
Road, southwest side of, small scrub oak, in top of stub; copper nail, painted "U. S. P. T. 8"	33 26 01.20	82 05 35.09	764
Crossroad, 30 feet southeast of center of, in base of pine tree; spike (levelman's b. m.) painted "344.6"	33 25 54.47	82 05 12.69	2,016
Crossroads	33 26 06.10	82 05 01.66	1,502
Pine tree, 2 feet southeast of; copper nail in stake, painted "U. S. P. T. 9"	33 25 40.41	82 05 39.37	.....
Center of bridge across creek	33 25 19.87	82 05 55.53	2,400
On south side of road, in root of hickory tree; copper nail, painted "U. S. P. T. 10"	33 25 18.95	82 06 06.41	1,087
Old Mill Pond, 500 feet east of, 20 feet north of forks of road, at edge of bank; iron post stamped "Elev. 282"	33 25 20.05	82 06 15.21	754
Pine tree, 3 feet northwest of, in root of; copper nail, marked "U. S. P. T. 11"	33 25 16.85	82 06 42.24	2,314
Oak tree on north side of road, 1 foot south of; copper nail in hub, painted "U. S. P. T. 12"	33 25 19.20	82 07 17.72	3,008
Pine tree on southeast side of road, in root of tree; copper nail (levelman's t. b. m.), painted "339.8"	33 25 16 63	82 07 41.59	2,047
U. S. P. T. No. 4 (previously described)	33 25 00.19	82 08 09.26	2,874
U. S. P. T. No. 5 (previously described)	33 24 30.97	82 07 51.86	1,662
Oak tree stub (levelman's t. b. m.), painted "494.1"	33 24 35.30	82 07 32.93	2,162
Leaning pine tree, 20 feet north of road, in root of tree; copper nail, painted "U. S. P. T. 13"	33 24 41.19	82 07 08.41	4,011
Pine tree, south side of road, 4 feet northeast of, in root, copper nail, painted "U. S. P. T. 14"	33 24 55.57	82 06 24.31	.....
Iron post, "Elev. 282" (previously described)	33 25 20.05	82 06 15.21	2,592
Road, 7 feet west of, 18 inches east of pine tree, in root; copper nail, painted "U. S. P. T. 15"	33 25 42.23	82 06 40.10	3,075
Pine tree, 7 feet northwest of, in root; copper nail, painted "U. S. P. T. 16"	33 26 01.60	82 07 06.92	2,999
Belair, iron post (previously described)	33 26 30.56	82 07 16.64	3,045

Magnetic declination, 0° 23′ E.

CAMP HANCOCK—Continued

Along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
North side of road, 15 feet from center, in top of small stub; copper nail, marked "U. S. P. T. 40"	33 25 06.73	82 08 52.95	.....
Road, north side of, at base of pine tree; nail, painted "U. S. 472"	33 25 14.33	82 09 09.36	1,589
Center of road, 5 feet north of, in top of stump of small oak bush, 1 foot south of 12-inch pine tree, painted "U. S. P. T. 41"; copper nail	33 25 16.77	82 09 18.44	808
T road fork, north, center of road	33 25 19.87	82 09 28.99	948
Center of road, 35 feet south of, at bend of same to north, in root of 18-inch pine tree; copper nail, painted "U. S. P. T. 42"	33 25 26.87	82 09 52.12	2,084
Dim road fork southward, in drain	33 25 32.50	82 10 05.68	1,281
Residence of Hamp Hancock, 10 feet south of road, in root of 10-inch pine tree; spike, painted "U. S. 499"	33 25 37.22	82 10 32.20	2,298
Intersection of road tangents, at forks of road	33 25 37.11	82 10 47.12	1,265
Iron post near race track	33 25 48.71	82 11 05.55	1,951
In front of house, in root of triple oak tree; copper nail, painted "U. S. P. T. 43"	33 25 39.72	82 09 28.56	2,004
Oak tree, small; copper nail in (levelman's t. b. m.), marked "466.2"	33 25 58.08	82 09 38.55	2,036
Milledgeville road, "U. S. P. T. No. 18"	33 26 15.35	82 09 33.90	1,787

Along highways.

Belair, 1.6 miles west of, on south side of road, 15 inches west of telephone pole; hub in ground, pole painted "U. S. P. T. 17"	33 26 15.45	82 08 53.12	.....
Belair, 1.8 miles west of, south side of road, 5 feet from telephone pole 6373; iron post stamped "Elev. 394"	33 26 15.17	82 09 05.13	1,017
Belair, 2.3 miles west of, 40 feet north of road, in root of pine tree; copper nail, painted "U. S. P. T. 18"	33 26 15.35	82 09 33.93	2,440
Belair, 2.8 miles west of, south side of road, 1 foot from telephone pole 6413; nail in hub, pole painted "U. S. P. T. 19"	33 26 13.53	82 10 05.65	2,695
Belair, 3.3 miles west of, northwest side of road, 1 foot south of telephone pole painted "U. S. P. T. 20"; copper nail in hub	33 26 08.78	82 10 37.68	2,757
Belair, 3.6 miles west of, south side of road, in root of tree painted "U. S. P. T. 21"; copper nail	33 25 57.95	82 10 41.94	1,153
Belair, 4 miles west of, near Columbia-Richmond county line, just west of race track, on top of hill, at forks of road nearly opposite telephone pole 6466; iron post stamped "Elev. 531"	33 25 48.71	82 11 05.55	2,209
Belair, 4.2 miles west of, northwest side of road, 50 feet from forks of road, 3 feet from pine tree painted "U. S. P. T. 22"; copper nail in hub	33 25 46.32	82 11 19.12	1,174
Belair, 4.8 miles west of, on west side of road, 2.5 feet east of telephone pole; copper nail in hub, painted "U. S. P. T. 23"	33 25 28.37	82 11 48.41	3,069
Belair, 5.2 miles west of, on northwest side of road, in base of telephone pole 6525, painted "U. S. B. M. 457.5"; spike	33 25 12.10	82 12 04.87	2,156
Belair, 5.5 miles west of, on southeast side of road, opposite telephone pole 6640, 1 foot from pole; copper nail in hub, painted "U. S. P. T. 24"	33 24 59.54	82 12 22.03	1,931
Belair, 6 miles west of, southeast side of road, 1.5 feet northwest of telephone pole, in hub; copper nail, painted "U. S. P. T. 25"	33 24 45.89	82 12 42.43	2,212
Belair, 6.3 miles west of, public-road crossing of Georgia R. R. 20 feet north of, 3 feet south of crossing signpost painted "490.7"; iron post stamped "Elev. 491"	33 24 38.75	82 12 59.78	1,639
High Top schoolhouse, 1.8 miles north of, 420 feet south of church, 2 feet east of pine tree painted "U. S. P. T. 26"; copper nail in hub	33 24 20.68	82 13 07.78	1,948
High Top schoolhouse, 1.25 miles north of, east side of road, in root of pine tree painted "U. S. B. M. 517.8"; copper nail	33 23 51.60	82 13 09.15	2,941
High Top schoolhouse, 0.6 mile north of, center of crossroads, near mail box	33 23 21.04	82 13 19.66	3,214
High Top schoolhouse, about 500 feet west of, center of crossroads	33 22 48.41	82 13 27.49	3,364
Bethesda Church, 900 feet east of; iron post stamped "Prim. Trav. Sta. No. 15, 1918 H"	33 22 44.81	82 13 44.99	1,529
Hawkins's position is	33 22 44.86	82 13 45.6	.....

Magnetic declination, 0° 18′ E.

CAMP HANCOCK—Continued.

Along Dean's Bridge road.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
High Top schoolhouse, 0.5 mile east of, 30 feet north of center of road, 3.5 feet south of pine tree painted "U. S. P. T. 27," in small oak stub; copper nail	33 22 52.10	82 12 48.48	.....
High Top schoolhouse, 1.2 miles east of, 15 feet south of center of road, 3 feet northwest of pine tree painted "U. S. P. T. 28," in hub; copper nail	33 22 51.50	82 12 11.08	3,173
High Top schoolhouse, 1.5 miles east of, 20 feet north of center of road, at base of pine tree painted "U. S. P. T. 29," in hub; copper nail	33 22 56.14	82 11 48.77	1,949
High Top schoolhouse, 1.7 miles east of, at dim road leading north 25° E., at corner of field, 18 feet north of center of road; iron post stamped "Elev. 460"	33 22 58.88	82 11 35.15	1,189
High Top schoolhouse, 2.3 miles east of, just east of angle of 40° in road, on south side of road, 1 foot from pine tree painted "U. S. P. T. 30," in hub; copper nail	33 23 02.04	82 10 59.04	3,079
High Top schoolhouse, 2.7 miles east of, on south side of road, 1 foot north of small oak sapling painted "U. S. P. T. 31," in hub; copper nail	33 22 49.51	82 10 40.59	2,013
High Top schoolhouse, 3.4 miles east of, 15 feet south of center of road, 5 feet northwest of pine tree painted "U. S. P. T. 32," in hub; copper nail	33 22 36.40	82 10 01.23	3,591
High Top schoolhouse, 4 miles east of, 20 feet north of road, pine tree in wire fence line painted "U. S. P. T. 33," in root; copper nail	33 22 34.30	82 09 17.56	3,710
High Top schoolhouse, 4.4 miles east of, at forks of road, 15 feet north of road, in line of road south 63° W., at fence corner; iron post stamped "Elev. 315"	33 22 29.47	82 09 00.70	1,511
Friendship Church, 2.5 miles southwest of, 18 feet south of center of road, 7 feet east of pine tree painted "U. S. P. T. 34," in road ditch, in root of tree; copper nail	33 22 23.83	82 08 41.55	1,721
Friendship Church, 2.2 miles southwest of, 75 feet southwest of creek crossing, 15 feet southeast of center of road, in root of large pine tree painted "U. S. P. T. 35"; copper nail	33 22 23.18	82 08 21.48	1,703
Friendship Church, 1.5 miles south of, at forks of road, at first-class road south, 20 feet west and 10 feet north of forks, on bank; iron post stamped "Prim. Trav. Sta. No. 1, Mac. 1918"	33 22 44.96	82 07 53.37	3,246
Friendship Church, 1.1 miles southwest of, near crossroads, northwest side of road, in root of pine tree painted "U. S. P. T. 311.6"; copper nail	33 22 58.78	82 07 33.74	2,173
Friendship Church, 0.7 mile southwest of, near crossroads, northwest side of road, at forks of road, in base of oak tree painted "U. S. P. T. 351.4"; spike	33 23 14.99	82 07 19.67	2,027
Crossroads, center of main road	33 23 25.23	82 07 11.91	1,227
Friendship Church, crossroads, at north intersection; iron post stamped "Elev. 445"	33 23 46.00	82 06 54.65	2,560

Magnetic declination, 0° 26′ E.

Along highways.

Dean's Bridge road; iron post stamped "Prim. Trav. Sta. No. 1" (described above)	33 22 44.96	82 07 53.37	.....
Near road fork, at base of pine tree painted "314.7"; nail	33 23 00.00	82 08 05.57	1,840
Forks of road	33 23 06.27	82 08 04.97	636
West side of road, in root of pine tree painted "U. S. P. T. 60"; copper nail	33 23 21.92	82 08 13.54	1,741
Near old house, in root of cedar tree painted "324.7"; copper nail	33 23 27.74	82 08 19.44	773
Stream crossing, 250 feet west of, south edge of road, in root of pine tree painted "286.3"; nail	33 23 28.20	82 08 34.86	1,308
Crossroad, 25 feet north of, in top of small oak stub painted "368.6"; copper nail	33 23 38.94	82 08 52.77	1,867
East side of road, in root of pine tree painted "U. S. P. T. 61"; copper nail	33 23 53.84	82 08 59.28	1,605
Forks of road	33 24 00.67	82 09 03.68	785
Small creek crossing, 380 feet north of, 6 feet west of wire fence line, close to small oak painted "U. S. P. T. 62"; copper nail in stub	33 24 24.88	82 08 58.24	2,490
Abandoned frame house, 50 feet northeast of, in root of water-oak tree painted "U. S. P. T. 457.9"; copper nail	33 24 36.52	82 08 46.72	1,529
Iron post "478 B" (previously described)	33 24 55.14	82 08 26.19	2,564

Magnetic declination, 0° 40′ E.

CAMP HANCOCK—Continued.

Along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Prim. Trav. Sta. No. 62 (previously described)	33 24 24.88	82 08 58.24	.....
Drain, 350 feet southeast of, 15 feet east of road at east end of field, in top of stake 1 foot from tree painted "U. S. P. T. 63"; copper nail	33 24 27.59	82 08 33.49	2,116
Catalpa tree on hill northeast of abandoned house, in root; copper nail, painted "U. S. P. T. 491.7"	33 24 09.03	82 08 21.04	2,153
Abandoned frame house, south of, in root of chinaberry tree painted "U. S. P. T. 369"; copper nail	32 23 41.53	82 08 01.05	3,256
Near old sawmill site, close to road, in root of oak tree, painted "U. S. P. T. 341.9"; copper nail	33 23 33.94	82 07 36.34	2,232
Dean's Bridge road, at base of oak tree; spike	33 23 14.99	82 07 19.67	2,380

Magnetic declination 0° 22′ E.

Along highways.

Crossroads; iron post stamped "478 B" (previously described)	33 24 55.14	82 08 26.19	.....
Crossroads, 17 feet west and 5 feet north of; iron post stamped "437–B," painted "436.7"	33 24 41.63	82 09 07.33	3,746
Stream crossing, 560 feet south of, 10 feet east of center of road, 1 foot from pine tree painted "U. S. P. T. 44"; copper nail in stake	33 24 26.63	82 09 39.08	3,089
Near forks of road, hub in ground	33 24 10.20	82 09 45.96	1,760
Pine log across road, in top of; copper nail, painted "U. S. P. T. 346.9"	33 23 58.60	82 09 53.46	1,334
Road fork, 10 feet south of, in 4 by 4 inch stake, painted "U. S. B. M. 322.9"; copper nail	33 23 52.72	82 10 04.69	1,123
Small stream, center of bridge over	33 23 48.34	82 10 13.45	865
Road fork southward, 20 feet east of, north side of road, at edge of wheel track, in root of stump painted "U. S. 318"; copper nail	33 23 40.58	82 10 28.48	1,496
Vacant house, opposite, at south edge of road, in root of oak tree, painted "U. S. P. T. 479"; copper nail	33 23 19.07	82 10 28.49	2,175
Lone pine tree, 4 feet north of, 20 feet west of center of road, in top of small oak stump painted "U. S. P. T. 45"; copper nail	33 22 58.22	82 10 39.64	2,309
U. S. P. T. 32 (previously described)	33 22 36.40	82 10 01.23	3,934

Magnetic declination, 0° 46′ E.

Along highways.

U. S. P. T. Sta. No. 22 (previously described)	33 25 46.32	82 11 19.12	.....
Road fork, 10 feet west of, in top of pine stump painted "424.2"; nail	33 25 30.31	82 11 07.66	1,887
Intersection of north and south cleared line with wagon road, east side of road, 3 feet from center, in top of stake painted "U. S. P. T. 46"; copper nail	33 25 05.12	82 10 51.48	2,891
Center of road, 4 feet west of, 3 feet south of tree, in top of pine stump painted "U. S. P. T. 47"; copper nail	33 24 39.45	82 10 35.25	2,936
Crossroads, 23 feet south, on east side of north and south road, in root of tree painted "U. S. B. M. 476.4"; nail	33 24 32.20	82 10 31.08	814
Crossroads, 0.25 mile east of vacant house in open field	33 24 22.04	82 10 35.19	1,084
Second-class road fork, near former site of sawmill, 10 feet south and 7 feet east of forks, in root of oak tree painted "320.9 U. S. P. T."; nail	33 24 09.05	82 10 47.19	1,660
Center of road, 10 feet south of, 5 feet northwest of pine tree painted "U. S. P. T. 48," in top of stake; copper nail	33 23 57.40	82 10 27.05	2,075
T. B. M. 3229 (previously described)	33 23 52.72	82 10 04.69	1,953

Magnetic declination, 0° 46′ E.

Along highways.

Intersection of roads (previously described)	33 25 37.11	82 10 47.12	.....
Small oak tree, 5 feet west of center of road, painted "478.4 U. S. P. T."; nail in root	33 24 56.66	82 10 34.01	2,430
Pine tree 12 feet east of center of road, in root of; nail, painted "U. S. P. T. 49"	33 24 29.90	82 10 14.54	3,168
Road, west side of, 3 feet from center, in root of pine tree painted "U. S. P. T. 441.6"; nail	33 24 18.35	82 10 07.01	1,330
T. B. M. "346.9" (previously described)	33 23 58.62	82 09 53.46	2,301

Magnetic declination, 0° 50′ E.

CAMP HANCOCK—Continued.

Along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Iron post stamped "460" (previously described)	33 22 58.88	82 11 35.15	.....
House, northwest of, at base of catalpa tree painted "487.9"; wire nail	33 23 11.92	82 11 27.73	1,460
Road at northeast edge of, in root of pine tree painted "P. T. 364.7"; wire nail	33 23 21.70	82 11 50.77	2,191
Dwelling house, 300 feet easterly from, in open field, at base of persimmon tree painted "U. S. P. T. 50"; copper nail	33 23 35.90	82 12 06.01	1,932
Forks of road, 8 feet south, 6 feet west of pine tree painted "U. S. B. M. 419.5"	33 23 55.24	82 12 28.64	2,739
Pine tree, near northeast wagon track, in root 7 feet northwest of tree painted "U. S. P. T. 51"; copper nail	33 24 15.32	82 12 51.76	2,822
P. T. No. 26 (previously described)	33 24 20.68	82 13 07.78	1,464

Magnetic declination, 0° 35′ E.

Along highways.

T. B. M. "517.8" (previously described)	33 23 51.60	82 13 09.15	.....
Pine tree on east side of road, in root; copper nail, painted "U. S. P. T. 53"	33 23 40.89	82 12 56.62	1,518
Northeast side of road, beside persimmon tree, in top of small stump painted "380.7"; copper nail	33 23 27.10	82 12 34.18	2,359
Creek crossing, center of road, at Youngblood's house, 55 feet southeast of, in root of oak tree painted "415.4"; copper nail	33 23 08.76	82 12 36.74	1,560
Prim. Trav. Sta. No. 28 (previously described)	33 22 51.50	82 12 11.08	2,790

Magnetic declination, 0° 35′ E.

Along highways.

T. B. M. (previously described)	33 23 19.07	82 10 28.49	.....
Near forks of road, 2 feet north of tree, painted "495.4," in stump; copper nail	33 23 17.80	82 10 02.39	2,217
Pine tree on north side of road, in root of; copper nail, painted "U. S. P. T. 52"	33 22 56.16	82 09 40.76	2,856
Crossroads	33 22 52.03	82 09 30.23	986
P. T. No. 33 (previously described)	33 22 34.30	82 09 17.56	2,091

Magnetic declination, 0° 20′ E.

Along highways.

P. T. No. 35 (previously described)	33 22 23.18	82 08 21.48	.....
Creek crossing, center of bridge at	33 22 44.86	82 08 17.88	2,213
Pine tree near forks of road, painted "267.1"; copper nail in root	33 22 49.16	82 08 22.37	578
Oak tree north of road, painted "317.0"; copper nail in root	33 23 11.17	82 08 41.63	2,760
Pine tree on west side of road, painted "U. S. B. M. 340.5," in root 2 feet north of tree; copper nail	33 23 19.35	82 08 48.32	1,003
T. B. M. (previously described)	33 23 38.94	82 08 52.77	2,015

On spur line from above T. B. M. (Unchecked.)

House, 500 feet northwest of, 1 foot northeast of pine tree, painted "U. S. P. T. 54"	33 23 57.35	82 09 24.26	3,255
Near house, in root of pine tree, not painted; copper nail	33 24 06.33	82 09 29.50	1,010

Magnetic declination, 0° 32′ E.

Forks of road (previously described)	33 24 00.67	82 09 03.68	.....
Old pine stump, in top of oak tree; copper nail, painted "436.7"	33 24 27.00	82 09 11.79	2,749
Iron post 437 B (previously described)	33 24 41.63	82 09 07.33	1,526

Magnetic declination, 0° 36′ E.

CAMP HANCOCK—Continued.

On spur line from above T. B. M. (Unchecked.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. B. M. "322.9" (previously described)	33 23 52.72	82 10 04.69	.....
Creek crossing, 165 feet west of, in root of small tree, painted "U. S. B. M. 277.7"; wire nail	33 23 41.39	82 09 35.11	2,757
House, 400 feet northwest from, on east side of road, pine tree painted "U. S. P. T. 55," in top of oak stub; copper nail	33 23 18.10	82 09 18.58	2,738
Oak tree at bend of road; copper nail in base, painted "270.8"	33 23 14.42	82 09 06.74	1,071
T. B. M "340.5" (previously described)	33 23 19.35	82 08 48.32	1,640
Magnetic declination, 0° 32′ E.			
T. B. M. "479" (previously described)	33 23 19.07	82 10 28.49	.....
Dim crossroads, 30 feet west of, in bottom of small pine tree, painted "489.2 P. T."; spike	33 23 23.98	82 10 48.80	1,793
Pine tree on north side of old road, painted "U. S. P. T. 464.5"; nail in root	33 23 31.08	82 10 56.13	950
Pine tree at north edge of road, painted "330.4 U. S. P. T."; spike in base	33 23 38.61	82 11 10.97	1,472
Top of hill, open ground, 20 feet east of road; iron post stamped "Prim. Trav. Sta. No. 2, Mac. 1918"	33 23 51.17	82 11 17.38	1,381
Pine tree 10 feet west of old road, painted "U. S. M. B. 416"; wire nail in root	33 24 03.73	82 11 25.19	1,432
Pine tree, 2.5 feet north of, 5 feet west of road, painted "U. S. P. T. 56" on tree; copper nail in root	33 24 22.73	82 11 43.45	2,467
Pine tree on west side of road, painted "390.9"; wire nail in root	33 24 44.02	82 11 48.32	2,191
Pine tree, 8 feet west of road, painted "U. S. P. T. 57"; copper nail at base	33 25 07.35	82 11 48.77	2,357
P. T. 23 (previously described)	33 25 28.37	82 11 48.41	2,125
Magnetic declination, 0° 40′ E.			
P. T. 25 (previously described)	33 24 45.89	82 12 42.43	.....
Oak tree, just southwest of old road, painted "U. S. P. T. 58"; copper nail at base (spur line unchecked)	33 24 29.27	82 12 19.89	2,544

Along highways from P. T. Sta. 13 H to Camp Hancock flagpole and return. (By H. S. Senseney in 1918.)

Prim. Trav. Sta. No. 13, H 1918 (previously described)	33 27 04.96	82 05 07.13	.....
Nail in tie, 10 feet east of second-class road crossing, marked "P. T. 13"	33 27 17.20	82 04 43.48	2,355
Milepost 7; nail in tie, marked "P. T. 14"	33 27 21.72	82 04 34.79	868
Road crossing, 8 feet east of; nail in tie, marked "P. T. 15"	33 27 29.00	82 04 20.91	1,386
Wheless, 1.3 miles northwest of, 30 feet north by 18 feet east of railroad crossing; iron post stamped "Prim. Trav. Sta. No. 1, S 1918"	33 27 46.58	82 03 47.05	3,375
Road crossing, 10 feet east of; nail in tie, marked "P. T. 16"	33 27 39.04	82 03 10.49	3,190
Wheless, east side of road, 55 feet south of railroad crossing; iron post stamped "Prim. Trav. Sta. No. 2, S 1918"	33 27 14.35	82 02 44.25	3,342
Crossroads, 15 feet south of, 5 feet east of ditch, on west side of road; hub marked "P. T. 17"	33 27 26.20	82 02 35.76	1,398
T road east, 25 feet north of, on east side of road; hub marked "P. T. 18"	33 27 41.25	82 02 21.75	1,930
Camp Hancock, 25 feet southwest of northeast corner of triangle inclosure, in front of Y. M. C. A. Administration Building, 3 feet south of telephone pole; iron post stamped "Prim. Trav. Sta. No. 3, S 1918"	33 28 08.33	82 01 58.05	3,394
T road north, at northeast corner of, at Camp library; hub, marked "P. T. 1"	33 28 10.78	82 02 17.01	1,625
Camp Hancock, 4 feet east of flag pole; iron post stamped "Prim. Trav. Sta. No. 4, S 1918"	33 28 17.42	82 02 47.65	2,681
Camp Hancock, flag pole on which camp surveys are based	33 28 17.42	82 02 47.70	.....
Cross roads, at southeast corner of, at Y. M. C. A. hut No. 77, 4 feet east of telephone pole, marked "P. T. 2"; hub	33 28 12.68	82 02 52.74	644
Latrines for officers only, on south side of road, 3 feet east of blazed pine, marked "P. T. 3"; hub	33 28 11.55	82 03 16.64	2,029
Crossroads, 30 feet west of, 7 feet south of sign post marked "Camp End Road," marked "P. T. 4"	33 28 10.37	82 03 44.70	2,379

CAMP HANCOCK—Continued.

Along highways from P. T. Sta. 13 H to Camp Hancock flagpole and return. (By H. S Senseney in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Camp Hancock, on south side of Wrightsboro road, 90 feet east of cement walk to S. G. Roswell's residence; iron post stamped "Prim. Trav. Sta. No. 5, S 1918"	33 28 09.70	82 03 52.99	706
Crossroads, at northeast corner of, 2 feet south of most easterly of five mail boxes, marked "P. T. 6"	33 28 09.76	82 03 59.95	590
T road south, 20 feet west of, on north side of road; hub, marked "P. T. 7"	33 28 05.70	82 04 30.37	2,610
Small house, in front of, 5 feet east by 2 feet north of southwest corner of bricked terrace; hub, marked "P. T. 8"	33 28 02.31	82 04 50.39	1,730
Camp Hancock, about 2 miles west of flag pole, on Wrightsboro road, at southwest corner of T road south (Barton's Chapel road); iron post stamped "Prim. Trav. Sta. No. 6, S 918"	33 27 55.20	82 05 14.86	2,194
Road forks, 3 feet southeast of signpost marked "Camden Road—Div. Intrenchments"; hub, marked "P. T. 9"	33 27 43.77	82 05 16.94	1,169
Crossroads, 6 feet south of, 2 feet east of west edge of road; hub, marked "P. T. 10"	33 27 35.98	82 05 14.42	815
Road forks to southeast, 12 feet south of, on east edge of road; hub, marked "P. T. 11"	33 27 29.49	82 05 11.42	703
Road fork road opposite, 2 feet west of east edge; hub, marked "P. T. 12"	33 27 08.40	82 05 08.13	2,150
Prim. Trav. Sta. No. 13 H (starting point, previously described)	33 27 04.96	82 05 07.13	357

Along highways. (By O. B. Walsh in 1918.)

Prim. Trav. Sta. No. 13 H	33 27 04.96	82 05 07.13	.....
Georgia R. R., at road crossing, 1.25 miles east of Belair, in wooden culvert, painted "337.9 P. T. 71"; nail	33 26 39.44	82 05 47.77	4,302
Belair, 1 mile east of, in log at road crossing Georgia R. R.; copper nail and washer, painted "U. S. 318.1 P. T. 72"	33 26 28.69	82 06 20.92	3,011
Belair, road crossing 25 feet north by 20 feet west of; iron post stamped "Prim. Trav. Sta. No. 15 W 1918. Elev. 309"	33 26 30.64	82 07 16.61	4,721
Station 229, in crosstie midway between rails; nail	33 26 50.79	82 07 42.65	3,002
Station 230, in middle of first crosstie west of road crossing; copper nail and washer marked "P. T. 37"	33 26 53.90	82 07 46.64	461
Belair, 1.4 miles northwest of, on Georgia R. R. at road crossing, 10 feet north of track and 14 feet west of center line of road; iron post stamped "Prim. Trav. Sta. No. 16, W 1918"	33 27 00.97	82 08 12.61	2,313
Belair, 1.9 miles northwest of, 30 feet west of center line of road and 9 feet south of pine tree marked "P. T. 38"; hub with copper nail and washer	33 27 17.86	82 08 36.81	2,666
Belair, 2.5 miles northwest of, in angle of road forks; iron post stamped "Prim. Trav. Sta. No. 17, W 1918"	33 27 25.14	82 08 59.82	2,084
Station 247, 18 feet west of center line of road, 3 feet east of 6-inch oak tree painted "P. T. 39"; hub with copper nail and washer	33 27 48.76	82 09 04.62	2,422
At road crossing, 6 feet west of center line of road and 48 feet south of shed, hub with copper nail and washer, painted "P. T. 40"	33 28 06.70	82 09 07.04	1,823
Augusta, 12 miles west of, on Wrightsboro Road, in southwest angle of road crossing, 10 feet east of mail box marked P. T., iron post stamped "Prim. Trav. Sta. No. 18, W 1918"	33 28 11.94	82 09 17.43	1,027

Mean magnetic declination, 0° 41′ E.

Martinez, 4 miles west of, in northwest corner of road crossing of Belair highway and Augusta road; iron post stamped "Prim. Trav. Sta. No. 21, W 1918"	33 30 26.77	82 08 30.69	.....
10 feet south of center line of road, 165 feet west of sign "Augusta 10 miles," 25 feet north of tree painted "P. T. 48"; hub with copper nail and washer	33 30 27.41	82 08 03.97	2,265
In exact center of main road, 4 feet east of center line of T road north, 25 feet southeast of signboard painted "P. T. 49"; hub with copper nail and washer	33 30 28.06	82 07 25.83	3,232
Martinez, 2.5 miles west of, on Augusta (Columbia) Road, 17 feet north of center line of road, 20 feet southeast of holly tree painted P. T.; iron post stamped "Prim. Trav. Sta. No. 22, W 1918"	33 30 26.72	82 06 56.25	2,509
Six feet north of center line of main road, 10 feet east of center line of T road south, 6 feet south of small oak tree painted "P. T. 50"; hub with copper nail and washer	33 30 28.91	82 06 22.05	2,906
Martinez, 1.5 miles west of, on Augusta (Columbia) Road, 16 feet south of center line of Augusta Road, 26 feet east of Washington Road; iron post stamped "Prim. Trav. Sta. No. 23, W 1918"	33 30 37.85	82 05 42.78	3,447
Station 336=Station 159, hub on north side of road, at T road south marked "P. T. 28"	33 30 51.75	82 04 55.69	4,229

Mean magnetic declination, 0° 22′ E.

CAMP HANCOCK—Continued.

Along highways. (By O. B. Walsh in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Hub with copper nail and washer, 4 feet east of center line of road, 50 feet east of fence post painted "P. T. 41"	33 28 24.43	82 09 35.61	.....
Station 262 B, hub with copper nail and washer, 5 feet east of center line of road, 32 feet south of post marked "P. T. 42"	33 28 27.68	82 09 57.70	1,900
Augusta, 9 miles west of, on branch road, 1 mile northwest of Wrightsboro Road, 7 feet east of center line of road; iron post stamped "Prim. Trav. Sta. No. 19, W 1918"	33 28 34.41	82 10 12.37	1,417
No observations for magnetic declination.			
Martinez, 2 miles south of, in northeast angle of cross roads; iron post stamped "Prim. Trav. Sta. No. 13, S 1918"	33 29 15.33	82 04 23.41	.....
Six feet north of center line of road, 24.6 feet north of tree marked "T. B. M. 299.6," painted "P. T. 51"; hub with copper nail and washer	33 29 26.06	82 03 44.59	3,463
Martinez, 2 miles southeast of, on Wheeler Road, 12 feet north of center line of road, 3 feet west of T road south; iron post stamped "Prim. Trav. Sta. No. 24, W 1918"	33 29 23.00	82 03 05.22	3,349
In root of 4-inch oak tree, 10 feet south of center line of road, 45 feet east of creek; copper nail and washer, painted "T. B. M. 232.9. P. T. 52"	33 29 17.87	82 02 38.40	2,332
In base of 2-foot pine tree, 10 feet south of center line of road; copper nail and washer, painted "T. B. M. 283.4. P. T. 53"	33 29 11.29	82 02 21.90	1,548
On north side of Wheeler Road, at farm road north; hub marked "P. T. 21"	33 29 06.93	82 02 07.86	1,270
Mean magnetic declination 0° 15′ E.			
Prim. Trav. Sta. No. 13, S 1918 (previously described)	33 29 15.33	82 04 23.41	.....
Seven feet east of center line of road, 105 feet north of lone pine tree marked "P. T. 54"; hub with copper nail and washer	33 29 39.70	82 04 19.90	2,481
Large spike in southeast corner of bridge, painted "T. B. M. 244.9. P. T. 55"	33 30 01.63	82 03 55.52	3,028
Martinez, 0.8 mile southeast of, midway on cutoff between Washington and Wheeler Roads, at T road west; iron post stamped "Prim. Trav. Sta. No. 25, W 1918"	33 30 17.12	82 03 36.89	2,223
Crossroads, 0.75 mile south of Washington Road; telephone pole painted "T. B. M. 293.1. P. T. 56"	33 30 14.35	82 03 13.78	1,977
Augusta, 5 miles northwest of, 25 feet north by 45 feet east of T road south; iron post stamped "Prim. Trav. Sta. No. 10, S 1918"	33 30 48.00	82 03 07.59	3,441
Mean magnetic declination, 0° 15′ W.			
Crossroads 0.75 mile south of Washington Road, telephone pole painted "T. B. M. 293.1. P. T. 56"	33 30 14.35	82 03 13.78	.....
Three-foot elm tree; copper nail and washer in root, marked "T. B. M. 226.3. P. T. 57"	33 29 59.25	82 03 21.25	1,652
In root of 2-foot maple tree marked "T. B. M. 225.1. P. T. 58"; copper nail and washer	33 29 55.67	82 03 31.68	954
In 2-foot pine stump, 7 feet north of tree marked "T. B. M. 273.6. P. T. 59"; copper nail and washer	33 29 46.00	82 03 32.38	979
In root of 2-foot mulberry tree, marked "T. B. M. 278.2. P. T. 60"; copper nail and washer	33 29 32.18	82 03 37.65	1,467
P. T. 51 (previously described)	33 29 26.06	82 03 44.59	852
Along highways. (By H. S. Senseney in 1918.)			
Crossroads 0.75 mile south of Washington Road; telephone pole painted "T. B. M. 293.1. △P. T. 56"	33 30 14.35	82 03 13.78	.....
In root of persimmon tree; copper nail and washer, marked "T. B. M. 260.4. P. T. 61"	33 30 13.22	82 02 42.71	2,635
In root of 3-foot pine tree, 15 feet north of road; copper nail and washer, marked "T. B. M. 206.0. P. T. 62"	33 30 09.92	82 02 18.58	2,070
In root of elm tree; copper nail and washer, marked "T. B. M. 193.7. P. T. 63"	33 30 04.71	82 02 05.12	1,257
Augusta, 3 miles northwest of, 30 feet west of Highland Road, 15 feet south of second-class road; iron post stamped "Prim. Trav. Sta. No. 8, S 1918"	33 29 55.76	82 01 52.76	1,384
Mean magnetic declination, 0° 05′ W.			

CAMP HANCOCK—Continued.

Along highways. (By H. S. Senseney in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
North side of road, at T road south; hub marked "P. T. 28"	33 30 51.75	82 04 55.69	
Prim. Trav. Sta. No. 23, W 1918 (previously described)	33 30 37.85	82 05 42.78	4,228
Center of track, 6 feet east of road crossing; copper nail in tie	33 30 41.33	82 06 04.85	1,903
18 feet north of old road crossing; copper nail in tie	33 31 08.84	82 06 49.87	4,719
Augusta, 11 miles west of, 20 feet west of Charleston & Western Carolina Ry. track at milepost 11; iron post stamped "Prim. Trav. Sta. No. 20, S 1918"	33 31 15.33	82 06 57.29	908
18 feet north of road crossing; copper nail in tie	33 31 31.13	82 07 00.08	1,614
Evans, 80 feet north by 20 feet east of railroad crossing; iron post stamped "Prim. Trav. Sta. No. 21, S 1918"	33 31 58.24	82 07 08.20	2,825
In triangle made by road forks; copper nail in hub	33 32 13.24	82 07 42.08	3,244
Evans, 0.75 mile west of, on road to old McKnight farm, at southwest corner of road forks; iron post stamped "Prim. Trav. Sta. No. 22, S 1918"	33 32 00.89	82 07 49.46	1,396
Station 215, 20.3 feet north of, north side of road at top of hill; copper nail in root of small pine	33 31 39.07	82 08 04.30	2,538
Evans, 2 miles southwest of, in triangle made by road forks, near the old McKnight farm; iron post stamped "Prim. Trav. Sta. No. 23, S 1918"	33 31 17.53	82 08 31.60	3,176
McKnight triangulation station (U. S. C. & G. S.). About 2 miles south of Evans railroad station, on the farm of W. J. McKnight, in a cultivated field directly in front of his dwelling house. The station is on west side of county road from Evans and is marked according to note 16	33 31 14.62	82 08 34.66	392
NOTE 16.—A large nail embedded in concrete with the point projecting ½ inch at center of a 4-inch tile which is set in a block of concrete 2.5 feet in diameter.			

Mean magnetic declination, 0° 47′ E.

Prim. Trav. Sta. No. 21, S 1918 (previously described)	33 31 58.24	82 07 08.20	
Station 227, 15 feet north of, on large boulder on north side of road; painted square	33 31 44.48	82 06 45.01	2,407
Evans, about 1 mile southeast of, at northeast corner of road forks, iron post stamped "Prim. Trav. Sta. No. 24, S 1918"	33 31 17.02	82 06 22.76	3,356
Copper nail in north end of tie at east side of railroad crossing	33 30 43.54	82 05 46.25	4,585
Prim. Trav. Sta. No. 23, W 1918 (previously described)	33 30 37.85	82 05 42.78	646

One observation for magnetic declination, 1° 20′ E.

Prim. Trav. Sta. No. 3, S 1918 (previously described)	33 28 08.33	82 01 58.05	
6 feet south of intersection of Highland Avenue and Belleview Avenue; hub marked "P. T. 19"	33 28 34.23	82 01 51.23	2,681
On brick culvert at southwest corner of Highland Avenue and Walton Way, 4 feet west of Station 106, T. B. M.	33 28 43.23	82 01 50.35	913
Augusta, on Walton Way, 1,520 feet west of Highland Avenue, at northwest corner of second-class road north; iron post stamped "Prim. Trav. Sta. No. 7, S 1918"	33 28 45.05	82 02 08.07	1,512
Road forks, 25 feet north of spring; hub marked "P. T. 20"	33 28 54.86	82 02 07.61	992
On north side of Wheeler Road, at farm road north; hub marked "P. T. 21"	33 29 06.93	82 02 07.86	1,220
Southeast corner of Wheeler Road and Highland Avenue, 4 feet west of north end of brick culvert; hub marked "P. T. 22"	33 29 05.76	82 01 47.98	1,688
On east side of road, 35 feet north of second-class road west, at mail box; hub marked "P. T. 23"	33 29 29.52	82 01 47.39	2,403
Prim. Trav. Sta. No. 8, S 1918 (previously described)	33 29 55.76	82 01 52.76	2,692
On north side of Washington Road, in line with Highland Avenue, 30 feet west of signboard painted "3¼ miles to Augusta"; hub marked "P. T. 24"	33 30 30.60	82 01 21.47	4,408
On north side of road, 20 feet west of second-class road north; hub marked "P. T. 25"	33 30 34.08	82 01 35.03	1,200
Augusta, 4 miles northwest of, on Washington Road, 25 feet south by 20 feet east of T lane south; iron post stamped "Prim. Trav. Sta. No. 9, S 1918"	33 30 40.15	82 02 16.09	3,531
At northeast corner of second-class T road north, 1 foot west of brick culvert; hub marked "P. T. 26"	33 30 45.82	82 02 53.34	3,206
Prim. Trav. Sta. No. 10, S 1918 (previously described)	33 30 48.00	82 03 07.59	1,227
South side of road, 20 feet east of T road north at church; hub marked "P. T. 27"	33 30 51.78	82 03 35.53	2,397

CAMP HANCOCK—Continued.

Along highways. (By H. S. Senseney in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Martinez, railroad crossing at railroad warning sign, 15 feet north of; iron post stamped "Prim. Trav. Sta. No. 11, S 1918"	33 30 59.78	82 04 24.72	4,243
Station 158: 20 feet east of railroad crossing; wire nail in tie (not marked)	33 30 58.62	82 04 39.05	1,219
North side of road, at T road south; hub marked "P. T. 28"	33 30 51.75	82 04 55.69	1,570
6 feet south of center line of east and west road, 30 feet east of center line of crossroads, tree marked "P. T. 29"; hub with copper nail and washer	33 30 27.82	82 04 58.15	2,428
In angle of road forks, 10 feet west of north and south road; hub	33 30 10.03	82 05 00.48	1,807
Martinez, 1 mile south of, at T road west, 10 feet east of center line of main road; iron post stamped "Prim. Trav. Sta. No. 12, S 1918"	33 30 01.64	82 04 56.94	899
Station 177: Hub	33 29 31.34	82 04 39.59	3,397
Station 179: At road forks, on west edge of north and south road, 24 feet east of southeast corner of small house; hub with copper nail and washer, witnessed by painted sign "P. T. 30"	33 29 28.87	82 04 33.96	539
Prim. Trav. Sta. No. 13, S 1918 (previously described)	33 29 15.33	82 04 23.41	1,635
East edge of main road, 11 feet south of center line of T road leading to house painted green	33 28 31.60	82 04 16.20	4,462
Station 213: 3 feet west of wire fence, on opposite side of road from tree painted "P. T. 34"; hub with copper nail and washer	33 28 22.15	82 04 10.22	1,081
Station 215: Prim. Trav. Sta. post No. 5 (described elsewhere)	33 28 09.70	82 03 52.99	1,927

Along highways. (By O. B. Walsh in 1918.)

12 feet south of center line of Milledgeville Road, 4 feet east of center line of Kissingbower Road, 5 feet north of post painted "P. T. 66"; hub	33 26 48.61	82 01 28.16	.....
Augusta, 3 miles southwest of, at junction of Milledgeville and Dean's Bridge roads, 5 feet west of stone signpost; iron post stamped "Prim. Trav. Sta. No. 30, W 1918"	33 26 46.58	82 00 48.76	3,345
Augusta, 4 miles southwest of, 260 feet south of junction of Richmond Hill and Dean's Bridge roads, 10 feet north of 3-foot pine tree painted "U. S. P. T."; iron post stamped "Prim. Trav. Sta. No. 31, W 1918"	33 26 13.83	82 01 35.86	5,185
Nail in root of pine tree, painted "P. T. 73"	33 25 58.48	82 02 11.69	3,410
Augusta, 6 miles southwest of, 100 feet west of T road north to Camp Hancock, on north side of road; iron post stamped "Prim. Trav. Sta. No. 32, W 1918"	33 25 42.23	82 02 50.83	3,702
Junction of Lumpkin and Dean's Bridge roads, in east brick headwall; square painted "P. T. 74"	33 25 33.87	82 03 09.60	1,801
Augusta, 7.4 miles southwest of, on Dean's Bridge Road, at second-class road crossing, 3 feet from pine tree painted "P. T."; iron post stamped "Prim. Trav. Sta. No. 33, W 1918"	33 25 12.56	82 04 10.23	5,572
Augusta, 8.5 miles southwest of, on Dean's Bridge Road at Barton's Chapel Road, directly in front of Barton's Chapel; iron post stamped "Prim. Trav. Sta. No. 34, W 1918, Elev. 268"	33 25 06.26	82 04 50.31	3,456
Nail in root of pine tree, marked "298.0" and "P. T. 75"	33 25 33.29	82 04 54.75	2,758
Junction of New McDuffie and Barton's Chapel roads, in base of 3-foot pine tree painted "U. S. 398.7" and "P. T. 76"; nail	33 26 05.86	82 05 01.82	3,345
Wheless, 3 miles southwest of, on New McDuffie Road, between Milledgeville and Barton's Chapel roads, at second-class T road east; iron post stamped "Prim. Trav. Sta. No. 35, W 1918"	33 26 10.12	82 04 45.36	1,460
Nail, in base of 15-inch pine tree, 14 feet south of center line of road, painted "P. T. 77"	33 26 09.37	82 04 17.07	2,399
Wheless, 0.9 mile southwest of, on Milledgeville Road at T road south; iron post stamped "Prim. Trav. Sta. No. 29, W 1918"	33 26 49.46	82 03 45.37	4,862

Mean magnetic declination, 0° 21′ E.

Prim. Trav. Sta. No. 40, W 1918	33 27 25.80	82 11 39.22	.....
West end of plank bridge, painted "U. S. 396.9" and "P. T. 90"; copper nail and washer	33 27 51.94	82 11 30.32	2,748
Grovetown, 1.5 miles northeast of, in angle of road forks, 8 feet east of 10-inch oak tree; iron post stamped "Prim. Trav. Sta. No. 42, W 1918"	33 28 20.50	82 11 17.90	3,072
Cottonwood tree, 14 feet from shack painted "U. S. 468.0" and "P. T. 91"; copper nail and washer in root of tree	33 28 32.01	82 11 39.45	2,164
Pine tree painted "U. S. B. M. 469.6" and "P. T. 92"; copper nail and washer in root	33 28 52.70	82 11 46.66	2,179
Station C: Grovetown, 2.5 miles north of, 12 feet west of center line of right angle turn of road; iron post stamped "Prim. Trav. Sta. No. 43, W 1918"	33 29 14.96	82 12 03.27	2,653

CAMP HANCOCK—Continued.

Along highways. (By O. B. Walsh in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Pine tree painted "U. S. 385.9" and "P. T. 93"; copper nail and washer in root	33 29 47.71	82 11 55.95	3,368
Pine tree painted "U. S. B. M." and "P. T. 94"; copper nail and washer in root	33 30 13.60	82 12 01.17	2,654
Martinez, 6 miles west of, at crossroads in front of Sardis schoolhouse; iron post stamped "Prim. Trav. Sta. No. 44, W 1918"	33 30 29.13	82 12 09.48	1,720
Willow tree painted "U. S. B. M. 278.0" and "P. T. 95"; 3 feet south of, in hub; copper nail and washer	33 30 29.46	82 11 41.34	2,384
Small plank bridge painted "U. S. B. M. 348.8" and "P. T. 96," in south end of; copper nail and washer	33 30 24.91	82 11 29.29	1,120
Martinez, 5 miles west of, on Columbia Road, 60 feet west of large oak tree painted "P. T." and "U. S. B. M. 367.4"; iron post stamped "Prim. Trav. Sta. No. 45, W 1918"	33 30 23.05	82 11 14.52	1,266
Tree painted "B. M. 281.6" and "P. T. 97," 6 feet east of, in small stump; copper nail and washer	33 30 21.58	82 10 54.24	1,725
Sweet gum tree painted "U. S. B. M. 350.3" and "P. T. 98," in root of; copper nail and washer	33 30 24.22	82 10 24.96	2,493
Martinez, 5 miles west of, on Augusta (Columbia) Road, in angle of road forks, 20 feet west of center line of road; iron post stamped "Prim. Trav. Sta. No. 20, W 1918"	33 30 16.03	82 10 03.18	2,023

Mean magnetic declination, 0° 31′ E.

Prim. Trav. Sta. No. 42, W 1918 (previously described)	33 28 20.50	82 11 17.90	.....
Pine tree painted "U. S. B. M. 444.8," in root; copper nail and washer	33 28 24.23	82 11 02.49	1,358
In hub beside witness stake painted "U. S. B. M."; copper nail and washer	33 28 36.47	82 10 56.39	1,339
Sweetgum tree painted "U. S. B. M. 433.0," in root; copper nail and washer	33 28 57.78	82 11 09.69	2,431
Large oak tree painted "U. S. B. M. 412.8," in root; copper nail and washer	33 29 24.33	82 11 20.24	2,827
Chinaberry tree painted "U. S. B. M. 394.0," in root; copper nail and washer	33 29 38.35	82 11 19.14	1,420
Pine tree painted "U. S. B. M. 372.5," in root; copper nail and washer	33 29 54.10	82 11 20.22	1,593
Prim. Trav. Sta. No. 45, W 1918 (previously described)	33 30 23.05	82 11 14.52	2,965

Mean magnetic declination, 0° 45′ E.

Grovetown, on west side of track, 100 feet from railroad station; iron post stamped "Prim. Trav. Sta. No. 39, W 1918. Elev. 483"	33 27 02.73	82 11 56.01	.....
Railroad crossing, in tie; painted "P. T. 109"; copper nail and washer	33 26 36.03	82 11 45.08	2,853
Forest station on Georgia R. R., at road crossing, in north end of small wooden bridge painted "U. S. P. T. 110"; copper nail	33 26 24.73	82 11 36.27	1,364
North edge of road, 210 feet east of railroad track, beside blazed tree; hub	33 26 08.30	82 11 28.44	1,788
Grovetown, 1.5 miles southeast of, on Milledgeville Road at T road west, old iron post stamped "Prim. Trav. Sta. No. 51 W 1918, Elev. 531"	33 25 48.71	82 11 05.55	2,772

One observation for magnetic declination, 1° 33′ E.

Prim. Trav. Sta. No. 23, S 1918 (previously described)	33 31 17.53	82 08 31.60	.....
Copper nail and washer in stump painted "P. T. 99"	33 31 07.82	82 08 06.01	2,379
Martinez, 2.6 miles east of, on cutoff road north from Augusta Road to Evans, at road forks in center of cluster of white farm buildings; iron post stamped "Prim. Trav. Sta. No. 46, W 1918"	33 31 10.88	82 07 48.76	1,494
Painted square on rock painted "U. S. 331.9" and "P. T. 170"	33 30 54.84	82 07 43.46	1,683
Plank bridge painted "U. S. B. M. 325.0" and "P. T. 108," on north end in painted square; spike	33 30 50.77	82 07 37.32	664
In center of road; hub with copper nail and washer: P. T. 49	33 30 28.06	82 07 25.83	2,494

Mean magnetic declination, 0° 32′ E.

CAMP HANCOCK—Continued.

Along highways. (By H. S. Senseney in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Prim. Trav. Sta. No. 11, S 1918 (previously described)	33 30 59.78	82 04 24.72	.....
Pine tree at northeast corner of crossroads, in root; copper nail	33 31 14.22	82 04 40.56	1,983
Pine tree on east side of road, in root; copper nail	33 31 40.91	82 05 07.18	3,515
Martinez, about 1 mile north of, on west side of Fury Ferry Road, where large boulder projects into road; iron post stamped "Prim. Trav. Sta. No. 28, S 1918"	33 31 59.74	82 05 18.23	2,122
Oak tree on west side of road, front of house, in root; copper nail	33 32 23.51	82 05 11.50	2,469
Oak tree on west side of road, in root; copper nail	33 32 56.49	82 05 21.79	3,445
Martinez, about 2 miles north of, on Fury Ferry Road, at northeast corner of road forks; iron post stamped "Prim. Trav. Sta. No. 29, S 1918"	33 33 20.09	82 05 41.17	2,895
Big pine tree on east side of road bend in root; copper nail	33 33 55.65	82 06 01.26	3,977
Small pine tree on south side of road at top of hill in root; copper nail	33 34 07.34	82 06 30.35	2,732
Martinez, 4 miles north of, on Fury Ferry road, in triangle made by road forks; iron post stamped "Prim. Trav. Sta. No. 30, S 1918"	33 34 18.64	82 06 55.57	2,421
Oak tree on east side of road, in root; copper nail	33 34 02.39	82 07 06.73	1,895
Evans, 1.5 miles north of, at southeast corner of road crossing; iron post stamped "Prim. Trav. Sta. No. 31, S 1918"	33 33 53.54	82 07 11.43	980
Tie on curve in east end of; copper nail	33 33 22.15	82 06 57.00	3,399
Evans, 1 mile north of, 12 feet east of Charleston & Western Carolina Ry. track, in cut; iron post stamped "Prim. Trav. Sta. No. 32, S 1918"	33 33 06.89	82 07 06.74	1,749
Milepost 13, south side of road crossing at, in west end of tie; copper nail	33 32 55.71	82 07 14.46	1,305
Road crossing, 10 feet north of, at south end of switch, in tie; copper nail	33 32 22.53	82 07 13.61	3,354
Station 412 (Station 203) Prim. Trav. Sta. No. 21, S 1918 (described elsewhere)	33 31 58.24	82 07 08.20	2,497

Mean magnetic declination, 0° 30′ E.

"Prim. Trav. Sta. No. 9, S 1918" (previously described)	33 30 40.15	82 02 16.09	.....
East side of road, at tall pine, in top of stump; copper nail	33 31 11.16	82 02 38.64	3,671
Southeast corner of railroad crossing, in root of oak tree; copper nail	33 31 18.58	82 02 55.05	1,580
Southeast corner of T road east, in root of small pine tree; copper nail	33 31 33.55	82 03 08.61	1,900
Augusta, 5 miles northwest of, on road to Fish Pond, at road forks, at base of oak tree in front of house; iron post stamped "Prim. Trav. Sta. No. 33, S 1918"	33 31 49.27	82 03 17.66	1,765
Small pine tree on east side of road, in root; copper nail	33 32 17.05	82 03 14.32	2,822
Bridge over outlet of Fish Pond, at southeast corner of, in top of post; copper nail	33 32 27.45	82 03 11.71	1,074
East side of road, on boulder; painted square	33 33 18.60	82 03 19.18	5,209
Augusta, 6.5 miles northwest of, 0.25 mile west of power house, 160 feet east of water tank; iron post stamped "Prim. Trav. Sta. No. 34, S 1918"	33 33 38.42	82 03 20.44	2,006
Road forks, pine tree on south side of road, in root; copper nail	33 33 32.30	82 03 40.09	1,776
Chinaberry tree on west side of road, in root; copper nail	33 33 41.57	82 04 01.09	2,010
Augusta, 7.5 miles northwest of, on hill 0.25 mile west of Savannah River, at bend in road at Abe Morgan's house; iron post stamped "Prim. Trav. Sta. No. 35, S 1918"	33 34 00.70	82 04 13.01	2,181
Northeast corner of second-class crossroads, in root of pine tree; copper nail	33 33 58.24	82 04 29.52	1,420
East side of road, in root of pine tree; copper nail	33 33 43.77	82 04 52.21	2,414
Augusta, 8.5 miles northwest of, 2.5 miles northwest of city power plant, on west side of road, at old road forks; iron post stamped "Prim. Trav. Sta. No. 36, S 1918"	33 33 40.85	82 04 52.28	295
East side of road, in front of cabin, in root of big oak; copper nail	33 33 23.27	82 05 03.40	2,011
Chinaberry tree, on west side of road, in root; copper nail	33 33 09.05	82 05 21.53	2,103
Oak tree, on west side of road, in root; copper nail	33 32 56.49	82 05 21.79	1,270

Mean magnetic declination, 0° 33′ E.

CAMP HANCOCK—Continued.

Along highways. (By H. S. Senseney in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Prim. Trav. Sta. No. 13, S 1918 (previously described)	33 29 15.33	82 04 23.41	.....
Wooden bridge, 75 feet northeast of, north end of, 33 feet east of center line of road; hub	33 29 05.61	82 03 44.71	3,422
Wooden bridge, in first plank from north end of, witnessed by sign painted "P. T. 31" on bridge rail; copper nail and washer	33 29 02.68	82 03 35.56	830
Augusta, 5 miles northwest of, in southwest angle of crossroads; iron post stamped "Prim. Trav. Sta. No. 14, S 1918"	33 28 58.02	82 03 21.43	1,286
T road northeast, 6 feet east of center line of, 10 feet north of center line of main road, post as a witness marked "P. T. 32"; hub	33 28 55.91	82 02 53.41	2,383
16 feet east of center line of road, opposite tree marked "P. T. 33"; hub with copper nail and washer	33 28 53.75	82 02 28.99	2,080
Prim. Trav. Sta. No. 7, S 1918 (previously described)	33 28 45.05	82 02 08.07	1,978

Mean magnetic declination, 0° 30′ E.

Prim. Trav. Sta. No. 13, S 1918 (previously described)	33 29 15.33	82 04 23.41	.....
Station 105, 1.4 feet south of: T. B. M. 20, on south side of road, in root of tree; copper nail	33 29 05.97	82 04 41.86	1,827
Augusta, 6 miles west of, on north side of Wheeler Road, 15 feet east of old road north into woods; iron post stamped "Prim. Trav. Sta. No. 15, S 1918"	33 28 58.63	82 05 15.94	2,981
Tree on north side of road, in root; copper nail	33 28 56.64	82 05 28.60	1,091
T. B. M. No. 19, south side of road, in root of tree; copper nail	33 28 57.84	82 05 45.43	1,431
T. B. M. No. 18, north side of road, in root of tree; copper nail	33 29 06.40	82 06 11.66	2,384
Augusta, 7 miles west of, north side of Wheeler Road, 3 feet north of big pine tree; iron post stamped "Prim. Trav. Sta. No. 16, S 1918"	33 29 14.02	82 06 28.25	1,602
T. B. M. No. 17, south side of road, in root of oak tree; copper nail	33 29 16.43	82 06 50.07	1,864
Pine tree on south side of road, in root; copper nail	33 29 15.89	82 07 32.47	3,592
Augusta, 8.5 miles west of, in northwest corner of crossroads at Marvin Church; iron post stamped "Prim. Trav. Sta. No. 17, S 1918"	33 29 17.19	82 08 00.84	2,407
Pine tree on east side of road, in root; copper nail	33 29 43.11	82 08 16.02	2,919
East side of road at road forks in root of dead pine; copper nail	33 30 08.97	82 08 25.39	2,733

Mean magnetic declination, 0° 42′ E.

"Prim. Trav. Sta. No. 17, S 1918" (previously described)	33 29 17.19	82 08 00.84	.....
T. B. M. No. 13, southwest corner of crossroads, in root of oak tree; copper nail	33 28 49.31	82 07 49.64	2,973
Belair, 2.5 miles north of, 1 mile south of Marvin Church, in northwest corner of road forks; iron post stamped "Prim. Trav. Sta. No. 18, S 1918"	33 28 24.44	82 07 43.10	2,574
T. B. M. No. 12: North side of road, in root of oak tree; copper nail	33 28 13.47	82 07 12.27	2,838
T. B. M. No. 11: Southwest corner of crossroads, in root of oak tree; copper nail	33 28 13.50	82 06 55.34	1,435
Augusta, 7 miles west of, on north side of Wrightsboro Road, 55 feet east of creek; iron post stamped "Prim. Trav. Sta. No. 19, S 1918"	33 28 14.07	82 06 21.10	2,900
South side of road, at second-class road south, in log; copper nail	33 28 08.71	82 05 58.43	1,995
East side of road, at west end of foot bridge over creek, in log; copper nail	33 27 59.29	82 05 39.35	1,875
South side of road, in root of chinaberry tree; copper nail	33 27 51.45	82 05 29.45	1,154
Prim. Trav. Sta. No. 6, S 1918 (previously described)	33 27 55.20	82 05 14.86	1,293

Mean magnetic declination, 0° 33′ E.

Prim. Trav. Sta. No. 18, S 1918 (previously described)	33 28 24.44	82 07 43.10	.....
Tall pine tree on south side of road, in root; copper nail	33 28 31.65	82 08 06.66	2,125
Marvin Church, 1 mile southwest of, on north side of Wrightsboro Road, 125 feet east of road forks; iron post stamped "Prim. Trav. Sta. No. 25, S 1918"	33 28 35.14	82 08 22.61	1,397
Pine tree on south side of road, 15 feet west of road forks, in root; copper nail	33 28 28.30	82 08 36.83	1,389
Prim. Trav. Sta. No. 18, W 1918 (previously described)	33 28 11.94	82 09 17.43	3,817

Mean magnetic declination, 0° 37′ E.

CAMP HANCOCK—Continued.

Along highways. (By H. S. Senseney in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. B. M. No. 11: Southwest corner of crossroads, in root of oak tree; copper nail	33 28 13.50	82 06 55.34	
T. B. M. No. 10: West side of road, in root of pine tree; copper nail	33 27 59.76	82 07 02.30	1,510
Belair, 1 mile north of, on the more easterly of two roads to Marvin Church, at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 26, S 1918"	33 27 36.32	82 07 07.93	2,417
T. B. M. No. 8: East side of road, in root of pine; copper nail	33 27 13.04	82 06 59.49	2,460
T. B. M. No. 7: East side of road, in root of pine; copper nail	33 26 51.03	82 07 02.60	2,240
Prim. Trav. Sta. No. 15, W 1918. Elev. 309 (previously described)	33 26 30.64	82 07 16.61	2,380
Mean magnetic declination, 0° 15′ E.			
Prim. Trav. Sta. No. 26, S 1918 (previously described)	33 27 36.32	82 07 07.93	
Station 316: South side of road, in root of small oak; copper nail	33 27 35.68	82 06 43.74	2,050
Belair, 1.25 miles northeast of, on Chatham Road, at southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 27, S 1918"	33 27 35.34	82 06 29.85	1,177
Station 320: North side of road, in root of small oak; copper nail	33 27 34.95	82 06 23.16	568
Station 328: South side of road, in root of pine; copper nail	33 27 37.21	82 06 00.89	1,901
Station 334: North side of road, in root of big pine; copper nail	33 27 47.56	82 05 42.88	1,849
Station 339: Station 171: South side of road, in root of chinaberry tree; copper nail	33 27 51.45	82 05 29.45	1,204
Mean magnetic declination, 0° 16′ E.			
Triangle made by road forks, in hub; copper nail	33 32 13.24	82 07 42.08	
South side of road, west side of gate, in hub; copper nail	33 32 29.99	82 08 07.39	2,731
North side of road, at store, on outcrop; painted square	33 32 36.45	82 08 22.96	1,471
Evans, about 1.5 miles northwest of, on south side of Washington Road, 200 feet west of creek; iron post stamped "Prim. Trav. Sta. No. 44, S 1918"	33 32 51.96	82 08 51.53	2,876
North side of road, at T road south, in root of stump; copper nail	33 32 59.86	82 09 07.31	1,562
West side of road, 15 feet north of creek, in hub; copper nail	33 33 11.07	82 09 22.79	1,732
South side of road, near church, in root of oak; copper nail	33 33 18.04	82 09 28.65	861
South side of road, west of small store, in root of pine; copper nail	33 33 24.04	82 09 36.74	915
East side of road at road forks, in hub; copper nail	33 33 43.80	82 09 55.30	2,541
Evans, 3 miles northwest of, on north side of Washington Road, at northeast corner of second-class T road north; iron post stamped "Prim. Trav. Sta. No. 45, S 1918"	33 33 57.75	82 10 02.94	1,552
North side of road, 20 feet west of mail box, in root of oak stump; copper nail	33 33 51.70	82 10 34.41	2,732
Bridge over creek, north end of west abutment; chiseled square	33 34 00.61	82 11 01.40	2,455
Evans, 4.5 miles northwest of, on south side of Washington Road, at southeast corner of T road south; iron post stamped "Prim. Trav. Sta. No. 46, S 1918"	33 34 05.29	82 11 15.23	1,262
South side of road, in root of pine; copper nail	33 33 46.31	82 11 22.75	2,021
West side of road, near negro cabin, in root of chinaberry tree; copper nail	33 33 30.97	82 11 29.16	1,642
East side of road, in hub; copper nail	33 33 24.17	82 11 33.70	788
Evans, 5.5 miles northwest of, on west side of second-class road, opposite negro cabin, at road forks about 1 mile south of Washington Road; iron post stamped "Prim. Trav. Sta. 47, S 1918"	33 33 08.62	82 11 39.18	1,639
South side of road, in stump; copper nail	33 32 49.78	82 11 38.40	1,905
North side of road, 20 feet west of creek, in hub at foot of oak; copper nail	33 32 29.02	82 11 36.15	2,108
West side of road, in front of house, in root of oak; copper nail	33 32 14.30	82 11 41.62	1,558
Evans, 4 miles west of, on second-class road running from the Washington Road to the Augusta Road, at northwest corner of crossroads at negro cabin; iron post stamped "Prim. Trav. Sta. No. 48, S 1918"	33 31 57.63	82 11 36.35	1,743
Road forks, in hub; copper nail	33 31 49.04	82 11 42.61	1,017
South side of road, 50 feet east of road forks, in pine stump; copper nail	33 31 39.19	82 11 59.01	1,708
Station 775: Station 767 (Walsh) (described elsewhere)	33 31 15.26	82 12 08.35	2,545
Mean magnetic declination, 0° 30′ E.			

CAMP HANCOCK—Continued.

Along highways. (By H. S. Senseney in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Prim. Trav. Sta. No. 18, W 1918 (previously described)	33 28 11.94	82 09 17.43	.....
North edge of road, in hub; copper nail	33 28 24.43	82 09 35.61	1,992
West side of road, in stump; copper nail	33 28 44.35	82 09 51.24	2,409
Pine tree on east side of road, in root; copper nail	33 29 00.35	82 09 54.88	1,647
Marvin Church, about 2 miles west of, at northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 49, S 1918"	33 29 08.48	82 09 55.64	824
West side of road, in front of negro cabin, in root of oak tree; copper nail	33 29 36.09	82 09 58.45	2,801
East side of road, in triangle made by road forks, in hub; copper nail	33 29 56.50	82 09 51.41	2,147
Prim. Trav. Sta. No. 20, W 1918 (previously described)	33 30 16.03	82 10 03.18	2,212
North side of road, east of road to house, in hub; copper nail	33 30 14.01	82 09 38.17	2,127
North side of road, 60 feet west of creek, in root of oak; copper nail	33 30 15.52	82 09 29.20	774
South side of road, in root of sweetgum; copper nail	33 30 18.30	82 09 23.22	580
North side of road, in root of oak; copper nail	33 30 25.74	82 08 55.01	2,505
Prim. Trav. Sta. No. 21, W 1918 (previously described)	33 30 26.77	82 08 30.69	2,062
East side of road, in root of pine; copper nail	33 30 52.00	82 08 33.11	2,558
McKnight Triangulation Station (U. S. C. & G. S.)	33 31 14.62	82 08 34.66	2,290

Mean magnetic declination, 0° 47′ E.

In triangle made by road forks, in hub; copper nail	33 32 13.24	82 07 42.08	.....
East side of road, in root of elm tree; copper nail	33 32 27.19	82 07 43.39	1,415
Evans, 1 mile northwest of, about 0.5 mile north of Washington Road, on east side of road at bend; iron post stamped "Prim. Trav. Sta. No. 41, S 1918"	33 32 49.57	82 07 52.28	2,383
East side of road, in root of dead oak; copper nail	33 33 20.57	82 07 41.01	3,275
Evans, 1.5 miles northwest of, 1.3 miles north of Washington Road, at southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 42, S 1918"	33 33 34.15	82 07 37.87	1,398
South side of road, in front of house, in root of oak; copper nail	33 33 50.18	82 07 24.32	1,986
Prim. Trav. Sta. No. 31, S 1918 (previously described)	33 33 53.54	82 07 11.43	1,143

Mean magnetic declination, 0° 36′ E.

West side of road, in root of oak; copper nail	33 32 56.49	82 05 21.74	.....
North side of road forks, in root of small elm; copper nail	33 32 50.72	82 05 43.77	1,949
Evans, 1 mile northeast of, on north side of second-class road leading to Ferry Road, 100 feet west of road forks; iron post stamped Prim. Trav. Sta. No. 39, S 1918	33 32 40.76	82 06 08.75	2,342
East side of road, 135 feet north of road forks, in root of large chinaberry tree; copper nail	33 32 31.34	82 06 39.33	2,758
South side of road, in root of oak; copper nail	33 32 29.98	82 06 50.24	934
Road crossing at south end of switch, 10 feet north of, in tie in center of track; copper nail	33 32 22.53	82 07 13.62	2,116

Mean magnetic declination, 0° 56′ E.

West side of road, in root of oak; copper nail	33 32 56.49	82 05 21.79	.....
North side of road, in root of pine; copper nail	33 33 00.22	82 05 01.76	1,738
North side of road, in root of oak; copper nail	33 33 08.04	82 04 41.95	1,854
Augusta, 8 miles northwest of, about 1 mile of city power plant, in angle made by second-class road forks, at top of hill overlooking the Savannah River; iron post stamped "Prim. Trav. Sta. No. 43, S 1918"	33 33 14.82	82 04 16.12	2,292
East side of road, in root of oak; copper nail	33 33 11.79	82 03 53.78	1,916
East side of road, at road forks, in root of pine; copper nail	33 33 28.52	82 03 43.56	1,900
South side of road, at road forks, in root of pine; copper nail	33 33 32.30	82 03 40.09	484

Mean magnetic declination, 0° 25′ E.

CAMP HANCOCK—Continued.

Along highways. (By H. S. Senseney in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Northeast corner of crossroads, in root of pine: copper nail	33 31 14.22	82 04 40.56	
West side of road, in root of cedar; copper nail	33 31 26.40	82 04 34.94	1,321
East side of road, in root of oak; copper nail	33 31 34.35	82 04 20.80	1,442
Martinez, 0.8 mile north of, on south side of second-class road running from the Ferry Road to Stevens Creek Road, 125 feet east of Negro cabin; iron post stamped "Prim. Trav. Sta. No. 38, S 1918"	33 31 40.23	82 04 14.31	810
West side of road, in root of pine; copper nail	33 31 46.76	82 03 53.94	1,848
North side of road, 25 feet west of creek, in root of stump; copper nail	33 31 53.91	82 03 38.51	1,493
Prim. Trav. Sta. No. 33, S 1918 (previously described)	33 31 49.27	82 03 17.66	1,827

Mean magnetic declination, 0° 36′ E.

East side of road, 135 feet north of road forks, in root of large chinaberry tree; copper nail	33 32 31.34	82 06 39.33	
North side of road, 35 feet west of small creek, in root of willow tree; copper nail	33 32 24.20	82 06 17.00	2,024
Evans, 1.5 miles east of, on second-class road to Jones Mill, at northwest corner of abandoned cabin; iron post stamped "Prim. Trav. Sta. No. 40, S 1918"	33 32 19.54	82 05 58.26	1,655
South side of road, in root of big pine; copper nail	33 32 23.28	82 05 46.24	1,085
North side of road, in root of pine; copper nail	33 32 19.31	82 05 23.69	1,952
West side of road, in front of house, in root of oak tree, copper nail	33 32 23.51	82 05 11.50	1,117

Mean magnetic declination, 0° 36′ E.

Along highways. (By O. B. Walsh in 1918.)

Prim. Trav. Sta. No. 3, S 1918 (previously described)	33 28 08.33	82 01 58.05	
Southeast of intersection of Wrightsboro Road and Johns Road, 7 feet from telephone pole marked "P. T. 64"; painted cross on top of stone corner post	33 28 03.97	82 01 13.34	3,813
Outskirts of city of Augusta, at southwest corner of intersection of Wrightsboro Road and Troupe Street; iron post stamped "Prim. Trav. Sta. No. 26, W 1918"	33 28 01.84	82 00 52.75	1,758
11 feet west of center line of road, at approach to gray painted house, in small plank bridge painted "P. T. 65"; copper nail and washer	33 27 36.80	82 01 03.45	2,688
Wheless, 1.75 miles east of, 50 feet north of Georgia R. R., at crossing, 21 feet west of center line of Kissingbower Road; iron post stamped "Prim. Trav. Sta. No. 27, W 1918"	33 27 18.44	82 01 16.59	2,163
Milledgeville Road, 12 feet south of center line of, 4 feet east of center line of Kissingbower Road, 5 feet north of post painted "P. T. 66" on south side of road; painted hub with copper nail and washer	33 26 48.61	82 01 28.16	3,171
Bridge wall painted "P. T. 67," on east end of; painted cross	33 26 50.48	82 01 58.20	2,552
Wheless, 0.7 mile southeast of, on Milledgeville Road at T road south, in southeast corner; iron post stamped "Prim. Trav. Sta. No. 28, W 1918"	33 26 52.05	82.02 24.97	2,274
Junction of Milledgeville and Wheless roads, on stone curbing, 4.2 feet southwest of cement signpost painted "P. T. 68"; painted cross	33 26 53.35	82 02 46.93	1,864
Prim. Trav. Sta. No. 2, S 1918 (previously described)	33 27 14.35	82 02 44.25	2,135

Mean magnetic declination, 0° 12′ E.

Junction of Milledgeville and Wheless roads, on stone curbing, 4.2 feet southwest of cement signpost painted "P. T. 68"; painted cross	33 26 53.35	82 02 46.93	
Stone bridge wall on west side of road, on east end, painted "P. T. 69"; chiseled mark and painted cross	33 26 53.14	82 03 15.17	2,392
Prim. Trav. Sta. No. 29, W 1918 (previously described)	33 26 49.46	82 03 45.37	2,586
Junction of McDuffie and Milledgeville roads on brick culvert, painted "T. B. M. 287.5. P. T. 70"; painted square	33 26 38.58	82 04 35.22	4,364
Station 502	33 26 39.97	82 04 59.40	2,053
Brick culvert, at corner of Bartons Chapel and Milledgeville roads, painted "T. B. M. 353.4. P. T. 35"; painted square	33 26 41.95	82 05 10.07	926
Prim. Trav. Sta. No. 13, H 1918	33 27 04.96	82 05 07.13	2,340

Mean magnetic declination, 0° 25′ E.

CAMP HANCOCK—Continued.

Along highways. (By O. B. Walsh in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Prim. Trav. Sta. No. 15, W 1918 (previously described)	33 26 30.64	82 07 16.61	.....
20 feet south of center line of main road, 4 feet east of center line of T road south and 20 feet east of telephone pole marked "P. T. 35"; hub with copper nail and washer	33 26 25.26	82 07 59.27	3,656
Pole marked "P. T. 36," 7 feet north of, on edge of road; hub with copper nail and washer	33 26 18.80	82 08 21.34	1,981
Telephone pole marked "U. S. 391.5. P. T. 78"; railroad spike in base of	33 26 21.15	82 08 34.72	1,158
Telephone pole marked "U. S. P. T. 79" (also marked "17," an old number)	33 26 15.45	82 08 53.12	1,662
Belair, 1.9 miles west of, on Milledgeville Road, 6 feet east of telephone pole marked "P. B. M. 394.1"; iron post stamped "Prim. Trav. Sta. No. 36, W 1918. Elev. 394"	33 26 15.17	82 09 05.13	1,018
Pine tree marked "U. S. P. T. 18" and "P. T. 80"; nail in root	33 26 15.35	82 09 33.93	2,440
Telephone pole marked "529.0. P. T. 81" nail in base	33 26 13.88	82 10 01.16	2,313
Telephone pole marked "U.S.P.T. 19. P.T. 82"; hub 1 foot south of	33 26 13.53	82 10 05.65	382
Grovetown, 1 mile east of, where Milledgeville Road forks to Grovetown, in angle of road forks; iron post stamped "Prim. Trav. Sta. No. 37, W 1918"	33 26 15.06	82 10 25.71	1,707
Grovetown, 0.5 mile east of, on main road to Augusta, south side of road, 5 feet east of telephone pole marked "P. T."; iron post stamped "Prim. Trav. Sta. No. 38, W 1918"	33 26 30.10	82 11 10.04	4,053
Elm tree painted "P. T. 83"; copper nail and washer in root of	33 26 55.04	82 11 33.86	3,229
Prim. Trav. Sta. No. 39, W 1918. Elev. 483 (previously described)	33 27 02.73	82 11 56.01	2,031
Prim. Trav. Sta. No. 40, W 1918 (previously described)	33 27 25.80	82 11 39.22	2,731
3-foot pine tree marked "U. S. 439.4. P. T. 84," in root of; copper nail and washer	33 27 26.12	82 11 25.91	1,128
Tree marked "U. S. 462.5. P. T. 85," in root of; copper nail and washer	33 27 31.62	82 11 09.96	1,462
Two-foot pine tree painted "U. S. 532.1 and P. T. 86," in root of; copper nail and washer	33 27 38.83	82 10 50.46	1,805
Large oak tree painted "U. S. B. M. 540.3. P. T. 87," in root of; copper nail and washer	33 27 48.53	82 10 40.90	1,272
Grovetown, 1.3 miles northeast of, on Wrightsboro Road, on edge of cotton field, 12 feet north of center line of road; iron post stamped "Prim. Trav. Sta. No. 41, W 1918"	33 27 53.16	82 10 26.78	1,284
Small oak tree painted "P. T. 88," in root of; copper nail and washer	33 27 59.72	82 09 40.04	4,015
Pine tree painted "U. S. 516.8. P. T. 89," in root of; copper nail and washer	33 28 04.02	82 09 30.90	888
Prim. Trav. Sta. No. 18, W 1918 (previously described)	33 28 11.94	82 09 17.43	1,394

Mean magnetic declination, 0° 02′ E.

Prim. Trav. Sta. No. 23, W 1918 (previously described)	33 30 37.85	82 05 42.78	.....
Cherry tree on south side of road, in root of; copper nail	33 30 30.50	82 05 36.06	935
Small pine tree standing in triangle made by road forks, in root of; copper nail	33 30 08.99	82 05 22.95	2,441
Martinez, about 2 miles southwest of, on a second-class road running between the Washington Road and Wheeler Road, west side of road forks, near small creek; iron post stamped "Prim. Trav. Sta. No. 37, S 1918"	33 29 57.70	82 05 29.60	1,272
Hickory tree on east side of road, in root of; copper nail	33 29 37.91	82 05 25.26	2,033
Pine tree on east side of road, in root of; copper nail	33 29 21.16	82 05 12.73	1,998
Prim. Trav. Sta. No. 15, S 1918 (previously described)	33 28 58.63	82 05 15.94	2,293

Mean magnetic declination, 0° 12′ E.

Prim. Trav. Sta. No. 15, W 1918 (previously described)	33 26 30.64	82 07 16.61	.....
Road crossing, in railroad tie painted "P. T. 37"; copper nail and washer	33 26 53.90	82 07 46.64	3,460
Belair, 1 mile west of, on Georgia R. R.; Prim. Trav. Sta. No. 16, W	33 27 00.27	82 08 12.61	2,313
Telephone pole on north side of track; U. S. B. M. spike, P. T. No. 100. Elev. 349.5	33 27 08.15	82 08 45.39	2,872
Belair, 1.6 miles west of, on Georgia R. R., at road crossing at sawmill, on north side of track; iron post stamped "Prim. Trav. Sta. No. 47, W 1918"	33 27 12.78	82 09 07.92	1,965
Belair, 2 miles west of, on south side of track; stone post painted square on top of post, painted "U. S. B. M. 388.8. P. T. 101"	33 27 08.34	82 09 41.44	2,876

CAMP HANCOCK—Continued.

Along highways. (By O. B. Walsh in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Grovetown, 2.2 miles east of, on Georgia R. R., on south side of track, 2 feet southwest of stone monument, 50 feet east of road crossing; old post stamped "Prim. Trav. Sta. 48, W 1918. Elev. 396"	33 27 02.55	82 09 55.31	1,313
Grovetown, 2.1 miles east of, on Georgia R. R., 40 feet south of track, 22 feet northeast of 2-foot pine tree painted "U. S. P. B.M. 403.5"; iron post stamped "Prim. Trav. Sta. No. 49, W 1918"	33 27 01.05	82 10 07.67	1,057
Railroad tie, 12 feet west of center line of road crossing, tie painted "P. T. 102"; copper nail and washer	33 27 07.19	82 10 38.78	2,708
Base of telephone pole painted "U. S. B. M. 425.5. P. T. 103," railroad spike	33 27 06.29	82 10 44.75	513
Grovetown, 1.3 miles east of, on Georgia R. R., 30 feet south of track; 6 feet south of stone monument; iron post stamped "Prim. Trav. Sta. No. 50, W 1918"	33 27 06.58	82 11 00.26	1,314
Station 731: Old U. S. B. M. 443.7 on railroad tie painted "P. T. 104"	33 27 15.19	82 11 11.53	1,291
Station 738: 40 W (described elsewhere)	33 27 25.80	82 11 39.22	2,579

One magnetic declination, 1° 36′ E.

Prim. Trav. Sta. No. 44, W 1918 (previously described)	33 30 29.13	82 12 09.48	.....
West end of small plank bridge painted "U. S. B. M. 328.4" and "P. T. 112"; copper nail and washer	33 30 43.80	82 12 06.07	1,511
Grass triangle at road forks, 0.7 mile north of Sardis schoolhouse, stake painted "P. T. 113"; hub with copper nail and washer	33 31 15.26	82 12 08.35	3,186
Evans, 3.8 miles west of, 1 mile northeast of Sardis school, on road from Augusta road to Evans, 10 feet north of center line of road, on edge of cotton field; iron post stamped "Prim. Trav. Sta. No. 52, W 1918"	33 31 23.24	82 11 57.74	1,207
South end of small wooden bridge painted "U. S. B. M. 251.9" and "P. T. 114"; copper nail and washer	33 31 32.23	82 11 27.78	2,695
30-inch pine tree, painted "U. S. B. M. 240.1" and "P. T. 115," in root; copper nail and washer	33 31 41.16	82 11 09.81	1,769
Evans, 2.7 miles west of, on road to Sardis School, in angle of road forks at T road north, 70 feet southeast of pine tree painted "P. B. M"; iron post stamped "Prim. Trav. Sta. No. 53, W 1918"	33 31 45.45	82 10 27.21	3,633
Oak tree painted "U. S. B. M. 408.8" and "P. T. 116," in root; copper nail and washer	33 31 48.25	82 10 07.96	1,654
Angle of road forks, white painted T. B. M. hub, witness post 422.3	33 31 49.00	82 09 42.00	2,199
Fence corner painted "U. S. 430.5" and "P. T. 117," in hub; copper nail and washer	33 31 48.95	82 09 32.42	812
Evans, 1.4 miles west of, on road to Sardis School on Columbia Road in angle of road forks where road turns southeast to McKnight triangulation station; iron post stamped "Prim. Trav. Sta. No. 54, W 1918"	33 31 46.83	82 09 08.00	2,078
Pecan tree painted "U. S. B. M. 482.5" and "P. T. 118," in root; copper nail and washer	33 31 33.58	82 08 49.05	2,090
Station 797: Prim. Trav. Sta. No. 23, S 1918 (described elsewhere)	33 31 17.53	82 08 31.60	2,194

Mean magnetic declination, 0° 32′ E.

Angle of road forks, white painted T. B. M. hub, witness post 422.3	33 31 49.00	82 09 42.00	.....
Road forks near Enoch School, 20 feet west of fence post painted "U. S. B. M. 394.1" and "P. T. 119"; T. B. M. hub	33 31 58.77	82 10 01.60	1,930
Pine tree, painted "U. S. B. M. 380.6" and "P. T. 120," in root; copper nail and washer	33 32 16.73	82 09 59.80	1,821
Evans, 2.3 miles northwest of, on second-class road, 1 mile south of Washington Road on way to Enoch School; iron post stamped "Prim. Trav. Sta. No. 55, W 1918"	33 32 33.12	82 09 51.49	1,799
Road forks at farm road, 22 feet west of pine tree painted "U. S. B. M. 354.2" and "P. T. 121"; T. B. M. hub	33 32 43.20	82 09 57.25	1,129
Road forks, P. T. No. 122; copper nail and washer in hub	23 33 11.55	82 09 45.79	3,025
South side of road, west of small store, in root of pine tree; copper nail	33 33 24.04	82 09 36.74	1,476

Mean magnetic declination, 0° 13′ E.

CHALKER QUADRANGLE.

West near center of quadrangle. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Warthen, "Prim. Trav. Sta. No. 149 Mac., 1918"	33 06 12.3	82 48 13.5	.....
Road fork	33 06 38.7	82 48 50.1	4,106
Milestone 11, center of road, at lane northwest	33 07 12.6	82 49 30.9	4,880
T road west	33 07 44.4	82 50 11.2	4,708
T road corners	33 08 23.4	82 50 38.3	4,566
Creek crossing, bridge over	33 08 12.0	82 51 35.3	4,988
Road forks	33 08 05.5	82 52 41.8	5,703
Do	33 07 14.6	82 53 25.8	6,372
Do	33 06 46.2	82 54 49.6	7,688
Do	33 06 57.8	82 55 35.9	4,114
T road north	33 06 51.6	82 56 07.1	2,732
Road forks	33 06 26.2	82 57 04.5	5,520
Buffalo Creek, center of bridge over	33 06 24.7	82 57 33.1	2,449
Road fork	33 06 31.9	82 58 09.9	3,219
Linton, three corners, at T road south, 80 feet southeast to corner of post office and store, 30 feet north to corner of yard fence	33 06 44.8	82 58 49.7	4,440

East near center of quadrangle.

Warthen, "Prim. Trav. Sta. No. 149"	33 06 12.3	82 48 13.5	.....
Angle of roads, in line of road southeast and road southwest	33 06 44.9	82 47 28.1	5,075
Road forks	33 05 58.8	82 46 43.2	6,021
T road S. 20° W	33 05 27.2	82 45 33.7	6,732

East at north border of quadrangle.

T road, second class, southwest	33 14 51.5	82 48 17.6	.....
Crossroads	33 14 31.3	82 46 49.0	7,801
T road south	33 14 47.2	82 45 56.7	4,729

East along highways near south border of quadrangle.

Deepstep; iron post stamped "21 1906"	33 01 51.9	83 00 32.4	.....
Road fork, on road north, about 30 feet west of road southwest	33 01 22.7	82 59 14.3	7,279
Road fork	33 01 06.4	82 58 50.6	2,606
Deepstep, T road north at	33 01 06.2	82 58 21.5	2,489
Road fork	33 00 58.6	82 57 32.4	4,249
Do	33 00 57.2	82 56 11.6	6,891
Milestone 8, center of road at	33 01 04.6	82 55 25.2	4,029
Sandersville, 7 miles west of, on road to Deepstep, 40 feet north of forks of road, on west side of road N. 30° W., 2.5 feet from wire fence; iron post stamped "Prim. Trav. Sta. No. 148, 1918 Mac."; azimuth to right-hand edge of chimney 147° 46′	33 01 21.5	82 54 39.5	4,252
T road north	33 01 03.4	82 53 42.0	5,229
T road south	33 00 56.5	82 52 37.9	5,505
Do	33 00 37.8	82 51 51.2	4,409
Milestone 3, center of road at	33 00 14.4	82 51 15.4	3,859
Road fork	33 00 00.8	82 50 31.0	4,031

North along Augusta Southern R. R. near east border of quadrangle. (By E. L. McNair in 1918.)

Intersection of railway tangents, angle of 33° 38′	33 00 28.6	82 47 05.8	.....
Silas flag station; public-road crossing	33 00 48.4	82 47 10.9	2,050
Public-road crossing	33 01 15.2	82 47 12.4	2,707
Do	33 01 31.2	82 47 03.6	1,789
Farm-road crossing	33 02 01.9	82 46 51.7	3,260
Do	33 03 08.0	82 47 10.5	6,875
Intersection of railway tangent	33 03 25.8	82 47 18.1	1,905
Road crossing	33 04 06.5	82 47 29.5	4,232
Do	33 04 22.5	82 47 28.6	1,621
Farm-road crossing	33 04 44.7	82 47 57.6	3,339
Road crossing	33 05 07.4	82 48 12.6	2,622
Warthen station, about 1,000 feet north of, 37 feet S., 60° E., from public-road crossing, 30 feet east of center of track, 2 feet from wire fence; iron post stamped "Prim. Trav. Sta. No. 149, 1918 Mac."; azimuth to west corner of W. H. Frank's brick store is 51° 54′ 15″	33 06 12.3	82 48 13.5	6,562
North end of trestle	33 06 42.4	82 48 02.1	3,195
Public-road crossing	33 07 11.4	82 47 43.0	3,347
Do	33 07 34.9	82 46 45.6	5,429
Second-class road crossing	33 07 40.2	82 46 11.7	2,932
Milepost 66	33 07 59.8	82 45 27.9	4,219
Second-class road crossing	33 08 19.3	82 45 02.2	2,948

Magnetic declination near east border of quadrangle, 1° 9′ E.

CLARKS HILL QUADRANGLE.

(By B. H. Yoakum in 1918.) For additional points see Camp Hancock list.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	33 34 33.7	82 08 04.2	.....
Sneads siding, road crossing at	33 33 53.6	82 07 11.6	6,011
Road crossing	33 32 55.9	82 07 14.4	5,838
Evans, main road crossing at	33 31 57.4	82 07 08.5	5,933

Along highways near south border of quadrangle.

T road west	33 32 01.2	82 07 49.2	3,470
U. S. C. & G. S. triangulation station McKnight, on farm of W. J. McKnight, 2 miles south of Evans railroad station. Station is directly in front of dwelling house, among a few peach trees planted in a cotton field, west side of county road from Evans railroad station. Distance to southeast corner of chimney of house is 174.6 feet and from reference mark is 73.980 meters. Station mark: two 4-inch tile pipes, one above the other, set in concrete, each with a nail in its top, top of upper pipe being even with surface, in yard east of garden-fence line, 20 feet north of fence on north side of lane leading to barn. A 60-foot tripod erected and all observations made from top. Good view to east	33 31 14.6	82 08 34.7	6,080
Crossroads	33 30 26.6	82 08 40.4	4,866
T road southwest	33 30 16.3	82 10 03.1	7,913
Walton Branch, stream crossing	33 30 21.3	82 10 54.1	4,345
William Brigham's residence, near Sardis schoolhouse, T road fork at	33 30 27.7	82 12 05.1	6,040
T road south	33 30 59.4	82 13 47.0	9,206
T road south to Grovetown	33 31 09.0	82 14 35.1	4,184

Along highways near west border of quadrangle.

Old Delph post office, on Washington road, 0.6 mile east of, T road north	33 34 22.6	82 14 06.7	.....
Center of "old Petersburg road" at T road southwest	33 35 32.1	82 13 42.0	7,325
Kiokee Creek, 1,500 feet north of iron bridge over, T road west	33 36 16.2	82 14 07.7	4,965
Second Mount Carmel Baptist Church, 210 feet south of, 760 feet north of T road west, 20 feet east of road forks, on east side of old Petersburg road; iron post stamped "Prim. Trav. Sta. No. 23, 1918 Y"	33 37 20.3	82 14 25.8	6,657

COBBTOWN QUADRANGLE.

South along highways near east border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads	32 14 09.6	82 00 08.5	.....
Road fork at Little Dry Creek	32 13 58.1	82 00 24.6	1,800
Crossroads	32 13 14.0	82 00 27.5	4,471
Road fork at Evans-Tattnall county line	32 12 40.8	82 00 39.0	3,494
Crossroads	32 11 49.2	82 01 11.8	5,923
North end of bridge	32 11 02.1	82 01 07.2	4,781
Center of small creek	32 10 11.4	82 01 15.1	5,168
Road fork	32 09 52.0	82 01 07.5	2,073
Manassas, 40 feet east of Seaboard Air Line Ry. station, 26 feet north of track, 2 feet west of crossing sign; iron post stamped "Prim. Trav. Sta. No. 25, 1918 J"	32 09 37.2	82 01 12.9	1,571

Magnetic declination for east border of quadrangle, 0.4° E.

COBBTOWN QUADRANGLE—Continued.

West along Seaboard Air Line Ry.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	32 09 27.2	82 00 18.6	
Manassas, Prim. Trav. Sta. No. 26, 1918 J	32 09 37.2	82 01 12.9	4,773
Road crossing	32 09 44.2	82 01 53.5	3,568
Do	32 10 04.0	82 03 44.1	9,720
Do	32 10 12.7	82 04 32.4	4,250
Do	32 10 20.3	82 05 14.6	3,709
Collins, at northwest corner of Standard Oil plant, 50 feet south of track, 100 feet southwest of depot; iron post stamped "Prim. Trav. Sta. No. 34, J 1918"	32 10 43.6	82 06 34.9	7,301
End of tangent	32 10 56.2	82 07 15.8	3,747
Road crossing	32 10 56.5	82 07 32.3	1,421
East end of trestle	32 11 15.9	82 07 58.7	3,003
Danton, road crossing	32 11 30.3	82 08 37.3	3,628
Road crossing	32 11 39.1	82 09 06.1	2,640
Do	32 11 44.9	82 09 29.1	2,062
Overhead bridge, road crossing under	32 11 40.2	82 09 52.0	2,035
East end of trestle	32 11 13.3	82 11 11.8	7,377
West end of trestle	32 11 13.1	82 11 27.2	1,320
Road crossing	32 11 12.2	82 12 20.9	4,620
Choopee, 60 feet east of station, 2 feet west of crossing sign; iron post stamped "Prim. Trav. Sta. No. 35, J 1918"	32 10 48.7	82 13 11.9	4,995
T road west	32 11 26.8	82 13 15.2	3,853
Road fork	32 11 49.1	82 13 11.9	2,270
Do	32 12 13.0	82 13 28.0	2,782
Crossroads at graveyard	32 12 51.1	82 13 43.2	4,056
Crossroads	32 13 25.7	82 14 27.0	5,132
Center of road opposite well at school	32 14 19.0	82 14 56.1	5,940
Crossroads	32 14 35.6	82 14 51.3	1,718

Magnetic declination in northwest corner of quadrangle, 0° 55′ E.

North along highways near west border of quadrangle. (By G. T. Hawkins in 1918.)

Second-class crossroads	32 00 16.7	82 11 42.3	
Elsa post office, 400 feet east of road fork	32 00 54.8	82 12 16.2	4,833
Crossroads at old store	32 00 52.2	82 13 06.6	4,352
Elsa, 1.25 miles northwest of, on south side of east and west road, at T road northwest; iron post stamped "Prim. Trav. Sta. No. 43, 1918 H"; azimuth to right-hand lightning rod on house north is 145° 19′ 30″	32 00 59.8	82 13 56.3	4,349
Road west	32 01 18.3	82 14 22.1	2,898
Road fork	32 01 31.7	82 14 26.6	1,407
Creek east	32 02 14.3	82 14 02.1	4,800
Fork southeast, at mail box	32 02 54.6	82 14 27.8	4,624
Road east, 20 feet southwest of mail box	32 03 38.4	82 14 58.1	5,138

Magnetic declination near west border of quadrangle, 1° 9′ E.

North along highways near west border of quadrangle. (By Oscar Jones in 1918.)

Crossroads	32 06 23.6	82 14 47.0	
East end of footbridge over creek	32 06 36.9	82 14 25.7	2,272
Road fork, 300 feet west of Mount Moria Church	32 06 45.4	82.13 48.5	3,295
Road fork at northeast corner of Mount Moria graveyard	32 06 49.1	82 13 44.0	600
T road west at Giles's place	32 08 05.5	82 13 53.4	7,762
Road fork	32 08 39.5	82 13 31.2	3,932
Do	32 08 59.5	82 13 09.2	2,772
Pendleton Creek, north end of bridge over	32 09 08.2	82 12 49.4	1,929
Road fork	32 09 31.9	82 12 39.7	2,534
Do	32 10 16.8	82 12 56.1	4,745
Choopee, Prim. Trav. Sta. No. 35, J 1918	32 10 48.7	82 13 11.9	3,502

Northeast along highways near south border of quadrangle. (By G. T. Hawkins in 1918.)

Road fork to new bungalow, 300 feet north of	32 00 19.0	82 14 48.4	
Second-class road northwest	32 00 39.3	82 14 19.6	3,219
Prim. Trav. Sta. No. 43, 1918 H	32 00 59.8	82 13 56.3	2,886

COFFEE QUADRANGLE.

Southeast along Atlantic Coast Line R. R. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	31 17 03.7	82 15 52.2	.....
Homestead, road crossing	31 16 29.9	82 16 34.6	5,020
Road crossing	31 15 40.5	82 17 36.7	7,340
South end of trestle	31 15 26.3	82 22 41.6	.....
Road crossing	31 15 48.4	82 22 49.9	2,340
Do	31 16 14.8	82 22 59.7	2,800
Do	31 17 13.2	82 23 21.6	6,200
North end of trestle	31 17 40.7	82 23 32.0	2,920
Satilla River, north end of trestle	31 17 55.9	82 23 30.7	1,538
Road crossing at saw mill	31 18 48.3	82 23 10.6	5,568
Road crossing	31 19 10.2	82 23 21.5	2,409
Do	31 19 45.4	82 24 09.1	5,444
Do	31 19 55.1	82 24 25.3	1,714
Do	31 20 35.9	82 25 05.8	5,416
Haywood, road crossing at	31 21 29.3	82 25 59.4	7,124
Center of small trestle, 100 feet south of milepost A 94	31 21 57.3	82 26 43.3	4,740
Road crossing	31 22 28.4	82 27 09.0	3,838
Bolen station, 50 feet west of track, 10 feet south of mail box, iron post stamped "Prim. Trav. Sta. No. 16, 1917"	31 23 31.2	82 27 58.8	7,700
Center of track opposite milepost 91	31 24 08.3	82 28 26.9	4,481
Road crossing	31 24 41.2	82 28 52.8	4,000
South end of trestle	31 25 01.5	82 29 08.8	2,480

Northwest along Atlanta, Birmingham & Atlantic R. R.

Road crossing	31 27 47.5	82 15 01.2	.....
Mershon, 50 feet south of track, 75 feet north of brick wall; iron post stamped "Prim. Trav. Sta. No. 18"	31 27 54.9	82 15 18.2	1,647
Road crossing	31 28 26.8	82 16 22.3	6,422
Do	31 28 44.7	82 16 38.6	2,299
Do	31 29 22.1	82 17 09.7	4,634
Do	31 29 53.9	82 17 41.7	4,250

DAISY QUADRANGLE.

South along highways near east border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork	32 14 26.8	81 46 09.8	.....
Road fork at graveyard	32 13 45.5	81 46 13.6	4,178
Crossroads	32 13 17.3	81 46 22.7	2,950
Crossing of Mill Branch	32 12 58.6	81 46 23.3	1,890
Crossroads	32 12 04.4	81 46 04.5	5,711
Crossroads, at C. B. Brown's mail box	32 11 23.1	81 46 01.5	4,170
Road fork	32 10 43.2	81 45 55.8	4,066
Crossroads	32 10 14.2	81 45 44.9	3,071
Road fork, Groveland-Claxton and Groveland-Statesboro roads	32 09 11.4	81 45 20.8	6,675

Near northwest corner of quadrangle.

Crossroads	32 14 34.9	81 59 30.3	.....

West along Seaboard Air Line Ry. through center of quadrangle.

West end of tangent	32 08 42.2	81 45 33.2	.....
Road crossing	32 08 36.9	81 46 01.6	2,498
East end of trestle over Canoochee River	32 08 32.6	81 46 27.8	2,300
West end of trestle over Canoochee River	32 08 30.1	81 46 41.7	1,220
Road crossing	32 08 45.8	81 47 26.8	4,196
Do	32 09 00.1	81 48 00.3	3,230
Do	32 09 04.3	81 48 48.7	4,182

DAISY QUADRANGLE—Continued.

West along Seaboard Air Line Ry. through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ″	*Feet.*
Daisy, road crossing at	32 09 03.4	81 50 11.4	7,110
Road crossing	32 09 03.0	81 50 39.0	2,380
Do	32 09 14.1	81 51 22.7	3,919
Do	32 09 26.0	81 52 09.5	4,200
Do	32 09 40.6	81 53 09.2	5,347
Crossing of Seaboard Air Line and Shearwood railroads	32 09 40.6	81 53 38.8	2,546
Claxton, 600 feet east of depot, 25 feet south of track, 10 feet east of street line; iron post stamped "Prim. Trav. Sta. No. 26, J 1918"	32 09 40.4	81 54 12.0	2,858
Brick church, road crossing at	32 09 39.7	81 54 41.5	2,541
Road crossing	32 09 30.3	81 55 22.6	3,660
Hagan, crossing of Seaboard Air Line and East Georgia railroads	32 09 24.4	81 55 47.9	2,255
Hagan, road crossing at depot	32 09 19.9	81 56 07.1	1,710
Road crossing	32 09 05.3	81 57 09.6	5,580
Do	32 09 00.2	81 57 47.1	3,260
Belleville, 30 feet east of station, 30 feet north of track, 1 foot west of crossing sign; iron post stamped "185"	32 09 08.0	81 58 29.2	3,713

Magnetic declination for east edge of quadrangle (north half), 0.6° E.

West along highways near south border of quadrangle. (By Oscar Jones in 1918.)

Crossroads	32 01 50.8	81 45 33.8	.....
Road fork	32 01 58.6	81 45 56.9	2,133
Do	32 02 15.7	81 46 26.2	3,056
Crossroads	32 02 40.1	81 47 32.8	6,244
Approximate crossing of Tattnall-Liberty county line	32 02 51.8	81 47 49.9	1,887
East side of road, 150 feet northeast of crossroads, 400 feet south of residence of William Wells; iron post stamped "Prim. Trav. Sta. No. 27, 1918 J; azimuth to lightning rod on front roof of house, 148° 35′ 45″	32 03 34.8	81 48 42.5	6,276
Crossroads	32 02 52.4	81 49 37.5	6,388
Do	32 02 29.8	81 50 54.7	7,022
Moody, crossing of East Georgia Ry	32 02 00.9	81 52 02.0	6,485
Crossroads	32 01 50.1	81 52 40.0	3,444
Road fork at school	32 01 47.8	81 53 22.5	3,669
Crossroads, Claxton-Glennville	32 01 39.9	81 53 34.7	1,316
Road fork at creek	32 01 29.1	81 53 54.3	2,007
Crossroads	32 01 30.5	81 54 41.0	4,017
Do	32 01 29.2	81 54 58.1	1,479
Do	32 01 24.1	81 55 35.0	3,221
Road fork	32 01 12.3	81 56 12.2	3,418
T road east	32 01 07.8	81 56 58.7	4,020
Crossroads	32 00 46.5	81 56 55.8	2,160
Center of bridge	32 00 42.7	81 57 52.1	4,858
Road fork	32 00 20.8	81 58 13.6	2,889
Mendes, 1,500 feet north of depot, north side of Reidsville-Glennville road, at northeast corner of road forks, near fence corner; iron post stamped "Prim. Trav. Sta. No. 28, 1918 J. Elev. 181"	32 00 06.6	81 58 32.4	2,162

North along highways near west border of quadrangle.

Road fork, Reidsville, Glennville, and Belleville	32 00 20.0	81 58 39.0	1,459
Road fork	32 01 13.0	81 58 39.5	5,357
Center of creek	32 02 05.7	81 58 50.4	5,412
Bench-mark post at southeast corner of road fork. Elev. 190	32 02 22.7	81 58 40.5	1,927
Center of creek	32 03 06.6	81 59 11.3	5,157
Crossroads	32 04 05.1	81 58 56.4	6,058
Crossroads and county line between Evans and Tattnall; in southeast corner of, iron post stamped "Elev. 188"	32 04 52.8	81 58 49.2	4,857
Crossroads	32 05 22.9	81 58 44.3	3,078
South end of bridge over Bull Creek	32 06 20.8	81 58 26.8	6,038
Road fork	32 06 59.4	81 58 21.8	3,935
Northeast corner of crossroads, Claxton to Reidsville and Belleville to Mendez; iron post stamped "Elev. 194"	32 07 17.7	81 58 20.6	1,852
Road fork	32 08 05.6	81 58 23.4	4,841
Do	32 08 36.2	81 58 29.1	3,228
Belleville; iron post stamped "185" (previously described)	32 09 08.0	81 58 29.2	3,113

Magnetic declination along south border of quadrangle, 0.8° E.; along west border of quadrangle, 0.8° E.

DANBURG QUADRANGLE.

Near southeast corner of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks	33 45 28.2	82 30 14.0	.....

DARIEN QUADRANGLE.

Along highways in west part of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Center of bridge	31 25 35.9	81 29 47.6	.....
Road forks	31 25 12.6	81 29 02.5	4,560
Center of bridge	31 25 04.6	81 28 23.6	3,474
Road forks	31 24 34.4	81 27 29.0	5,695
Bed of old tramway	31 24 05.8	81 27 17.8	3,034
Road through gate	31 23 50.1	81 27 00.3	2,194
Center of bridge	31 23 18.2	81 26 29.7	4,170
Road forks	31 22 57.9	81 26 17.4	2,310
Dixie highway crossing	31 22 28.3	81 26 02.6	3,256
Darien, 150 feet northwest of courthouse, 30 feet southwest of artesian well in triangle of road; iron post stamped "Prim. Trav. Sta. No. 6 J"	31 22 12.5	81 26 03.9	1,600

From Darien south along Georgia Coast & Piedmont R. R.

North end of bridge	31 22 02.6	81 26 10.7	1,162
South abutment, iron girder	31 21 25.4	81 26 36.7	4,378
South bank of river, at old mill	31 21 17.4	81 26 42.3	940
Road crossing island	31 20 59.6	81 26 50.7	1,934
Altamaha River, north bank of	31 20 19.1	81 27 02.2	4,215
Altamaha River, south bank of	31 20 11.9	81 26 59.3	770
North end of steel bridge	31 19 44.9	81 26 48.6	2,880
Road crossing	31 18 25.1	81 27 43.1	9,342
Do	31 17 26.2	81 27 51.9	6,091
Do	31 16 23.9	81 28 02.9	6,309
Do	31 15 28.3	81 28 08.2	.....

From Darien northeast along Georgia Coast & Piedmont R. R. to Oakhill.

Road crossing	31 23 11.9	81 25 21.7	.....
Spur to sawmill	31 23 37.8	81 25 03.3	3,060
Ridge station, center of track opposite	31 24 18.8	81 24 29.5	5,066
Road crossing	31 24 42.8	81 24 08.0	3,057
Do	31 24 58.4	81 23 55.0	1,940
Inwood, road crossing at	31 25 16.6	81 23 45.5	2,017
Road crossing	31 25 39.9	81 23 41.4	2,375
Do	31 26 18.7	81 23 36.7	3,926
Do	31 26 29.9	81 23 30.0	1,311
Do	31 27 11.1	81 22 36.3	6,175
Hudson road crossing	31 27 52.3	81 22 09.1	4,778
Road crossing	31 28 47.9	81 21 23.7	6,856
Oak Hill, road crossing	31 29 17.8	81 21 33.0	3,120

DATES QUADRANGLE.

North along Wadley Southern Ry. and public roads. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Second-class road crossing	32 30 13.6	82 15 29.3	.....
Road crossing	32 30 38.7	82 15 47.3	2,961
Do	32 30 52.6	82 16 23.3	3,391
McLeod station, about 320 feet west of, 20 feet north of center of track, in line with road leading N. 190° E.; iron post stamped "Prim. Trav. Sta. No. 132"; azimuth to milepost 27 about 3,300 feet distant is 300° 00′ 30″	32 31 07.1	82 16 53.3	2,955
Forks of road	32 31 38.9	82 16 43.1	3,326
Second-class crossroad	32 32 00.2	82 16 28.8	2,474
Forks of road	32 32 53.8	82 16 29.2	5,420
Do	32 33 39.7	82 16 12.9	4,850
Crossroad	32 34 13.7	82 16 19.5	3,474
See Garfield quadrangle for intermediate points.			
T road north	32 44 08.2	82 15 37.6	.....
Summertown, 0.5 mile east of, at end of street which runs southeast from station, 4 feet from fence, on east side of road; iron post stamped "Prim. Trav. Sta. No. 30, 1918 H"; 450 feet north is nail in hub on east side of road, azimuth 210° 55′ 30″; 207.6 feet west is nail in hub on south side of road azimuth 114° 23′ 20″	32 44 35.2	82 16 11.1	3,959
Summertown, second-class crossroad 1.5 miles southeast of	32 44 02.5	82 15 24.5	5,173

Southwest along Georgia & Florida Ry.

Road crossing	32 44 12.0	82 16 52.3	4,231
Second-class road crossing	32 43 14.9	82 17 19.1	6,212
Public-road crossing	32 42 39.8	82 17 35.5	3,810
Public-road crossing at Blun station	32 42 04.8	82 17 51.9	3,810
Public-road crossing	32 41 28.0	82 18 05.1	3,885
Road crossing	32 40 28.6	82 18 23.2	6,200
Road crossing at Modoc station	32 39 20.6	82 18 36.6	6,963
Second-class road crossing	32 37 56.1	82 19 02.9	8,827
Public-road crossing	32 37 19.0	82 19 13.1	3,855
Swainsboro, 88 feet N. 40° E. from crossing of Georgia & Florida and Wadley Southern railroads, opposite water tank, 20 feet S. 60° W. from milepost 178; iron post stamped "Prim. Trav. Sta. No. 134, 1918 Mac."; azimuth to knob in hand of figure of "Justice" on courthouse is 102° 31′ 15″	32 35 46.2	82 19 53.0	4,980
Milepost 177	32 34 56.5	82 20 03.3	5,096
Road crossing at spur siding	32 34 23.2	82 20 07.7	3,380
Public-road crossing	32 33 13.7	82 20 23.3	7,150
Road crossing	32 32 21.4	82 20 17.6	5,307
Do	32 31 27.2	82 20 11.2	5,491
Public-road crossing	32 30 40.5	82 20 05.8	4,736

Northwest along Wadley Southern Ry.

Swainsboro; iron post marked "134"	32 35 46.2	82 19 53.0	.....
Public-road crossing	32 36 32.9	82 20 15.1	5,090
Do	32 37 22.2	82 20 40.8	5,442
Second-class road crossing	32 38 00.2	82 20 45.3	3,855
Public-road crossing	32 39 18.7	82 21 25.2	8,633
Dellwood, road crossing	32 40 06.0	82 21 59.5	5,616
Second-class road crossing	32 41 10.6	82 22 22.2	6,805
Blundale, "Prim. Trav. Sta. No. 29, H"	32 42 57.3	82 23 30.2	12,260

Magnetic declination for northwest and north parts of quadrangle, 1.0° E.; for southwest part of quadrangle, 0.9° E.

Along highways near north border of quadrangle. (By G. T. Hawkins in 1918.)

Ennis, 1 mile northwest of, Mr. John Brown's mail box	32 44 51.8	82 28 06.4	.....
Ennis, railroad crossing north of station	32 43 52.1	82 27 31.3	6,743
T road south (new road)	32 43 23.4	82 26 40.9	5,193
People's Store, crossroads at	32 43 02.0	82 26 08.9	3,490
Crossroads, 160 feet west to three mail boxes	32 43 07.9	82 24 59.6	5,953
Blundale, 2 miles south of, in northwest corner of crossroads, 40 feet east of three mail boxes, 100 feet northeast of cabin; iron post stamped "Prim. Trav. Sta. No. 29, 1918 H"; 1,100 feet east to nail in hub on south side of road, azimuth 269° 42′ 45″; 300 feet west to nail in hub on north side of road, azimuth 82° 10′ 50″	32 42 57.3	82 23 30.2	7,719

DATES QUADRANGLE—Continued.

Along highways near north border of quadrangle. (By G. T. Hawkins in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Forks of road at house	32 42 59.9	82 22 50.6	3,390
Crossroads, 30 feet southwest to three mail boxes	32 43 26.0	82 21 39.0	6,667
Crossroads, 40 feet north to two mail boxes	32 43 32.5	82 20 52.0	4,061
Second-class crossroads, 20 feet southeast to corner of wire fence	32 44 16.3	82 20 18.6	5,271
Road opposite schoolhouse, on north side of road	32 44 59.8	82 19 39.6	5,512
Southwest along railroad and highways near west border of quadrangle. (By E. L. McNair in 1918.)			
Minton Church and schoolhouse, crossroads	32 43 57.8	82 28 47.3	.....
Crossing of Wadley Southern Ry	32 43 10.2	82 28 42.0	4,822
Tom station, 500 feet north of, public-road crossing	32 42 33.3	82 29 19.0	4,886
Angle in road, top of hill, directly in front of yard gate at residence	32 37 36.5	82 29 32.4	.....
Fork of road	32 37 19.5	82 28 47.7	4,193
Lambs schoolhouse, 300 feet east of, about 9 miles southwest of Swainsboro, 40 feet north and 12 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 135, 1918 Mac.;" azimuth to center of top of J. I. Kersey monument in cemetery, 615 feet distant, 305° 48′ 55″	32 36 59.0	82 27 58.6	4,685
East along highways near center of quadrangle.			
Fork of road, settlement road north	32 36 43.1	82 27 04.5	4,898
Ohoopee Creek, center of	32 36 14.4	82 25 53.6	6,725
Fork of road	32 36 01.3	82 25 10.6	3,910
Crossroads	32 35 31.5	82 24 14.4	5,682
Road fork, in line three ways	32 34 43.8	82 23 20.5	6,675
Road fork	32 34 46.6	82 23 01.1	1,681
Center of creek, bridge over	32 35 09.2	82 22 08.3	5,071
T road south	32 35 32.5	82 20 37.5	8,116
Swainsboro, Prim. Trav. Sta. No. 134, Mac. (previously described)	32 35 46.2	82 19 53.0	4,055

Magnetic declination along west border of quadrangle, 50′ E.; through center of quadrangle, 1° 09′ E.

DAVISBORO QUADRANGLE.

Along Central of Georgia Ry. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	32 54 46.2	82 30 03.3	.....
Milepost A179	32 55 38.1	82 30 31.7	5,787
Milepost A177	32 56 46.1	82 31 58.8	10,123
Jefferson-Washington county line post, center of track	32 56 50.8	82 32 20.9	1,945
Road crossing	32 57 02.6	82 33 17.1	4,935
Center of creek crossing	32 57 08.3	82 33 44.5	2,411
Center of concrete pier at creek crossing	32 57 24.0	82 34 33.3	4,456
Milepost A174	32 57 34.8	82 34 54.3	2,098
Milepost A173	32 58 07.1	82 35 43.2	5,296
Davisboro station, 100 feet east of, 30 feet southeast of center of Main Street, 15 feet northeast of center of main track, 6 feet east of milepost A172; iron post stamped "Prim. Trav. Sta. No. 137, 1918 Mac."; azimuth to northeast corner of brick warehouse along side of track, 319° 48′ 50″; to southeast corner of brick station building, 78° 20′ 35″	32 58 40.0	82 36 31.9	5,322
Center of creek crossing	32 59 04.6	82 37 08.6	4,000
Do	32 59 06.7	82 37 52.8	3,770
Road crossing	32 58 54.0	82 38 21.6	2,781
Milepost A169	32 58 31.6	82 39 12.2	4,865
Milepost A168	32 58 07.3	82 40 07.5	5,315
Road crossing	32 57 50.7	82 40 44.9	3,600
Milepost A166	32 57 18.6	82 41 57.6	6,995
Second-class road crossing near milepost A165	32 57 02.7	82 42 55.0	5,156
Sunhill station, 500 feet west of road crossing at, 25 feet north of center of main track, on bank, 380 feet east of milepost A164; iron post stamped "Prim. Trav. Sta. No. 138, 1918 Mac."; azimuth to southwest corner of small brick building 550 feet distant, 283° 06′ 40″	32 57 05.3	82 43 53.2	4,975
Milepost A163	32 56 44.6	82 44 51.3	5,376

DAVISBORO QUADRANGLE—Continued.

West along highways near center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Center of bridge at creek crossing	32 52 52.6	82 30 11.8	.....
Road forks	32 52 53.0	82 31 09.0	4,883
Road forks, opposite fence corner on south side of road	32 52 21.4	82 32 22.4	7,034
Public-road crossing	32 52 12.8	82 33 15.9	4,647
Small bridge near church	32 51 48.6	82 33 58.1	4,352
Second-class T road south	32 51 21.1	82 34 22.2	3,462
Bartow, 8.5 miles west of, at Pleasant Spring Church, 115 feet S. 30° W. from southwest corner of church, 50 feet east of main public road; iron post stamped "Prim. Trav. Sta. No. 144, 1918 Mac."; azimuth to right edge of Nancy D. Frost monument in graveyard, 185 feet distant, 262° 25′ 24″; azimuth to left edge of brick chimney on negro house 1,000 feet distant, 182° 05′ 47″	32 50 18.4	82 35 44.2	9,445
Crossroads	32 50 07.5	82 36 24.8	3,634
Little Ohoopee River, bridge over	32 49 30.4	82 37 22.9	6,217
T road south	32 49 19.1	82 37 40.6	1,900
Road forks	32 49 02.1	82 38 19.9	3,773
Road forks, point is 15 feet south of small road bridge	32 48 52.9	82 39 12.3	4,567
Center of road at milestone 3	32 49 18.4	82 40 28.5	7,005
Crossroads at W. H. Bebingfield's store	32 49 20.8	82 41 09.8	3,535
Road forks	32 49 25.9	82 42 52.3	8,766
Harrison; iron post stamped "Prim. Trav. Sta. No. 140 Mac."	32 49 33.0	82 43 32.9	3,541

Magnetic declination for center of quadrangle, 1° 09′ E.

South along Wrightsville & Tennille R. R.

Road crossing, second class	32 51 38.8	82 44 56.9	.....
Road crossing	32 51 02.9	82 44 43.0	3,820
Milepost T 8	32 50 35.8	82 44 22.5	3,249
Road crossing, second class	32 50 03.5	82 43 47.1	4,449
Harrison station, 170 feet south of, 15 feet east of center of track, 20 feet south of main street crossing railway, 55 feet west of corner of brick building and in line with front wall of brick stores on south side of street; iron post set flush with surface of ground, stamped "Prim. Trav. Sta. No. 140, 1918 Mac.;" azimuth to Christian Church tower, 59° 30′ 30″	32 49 33.0	82 43 32.9	3,312
Road crossing, second class	32 49 04.9	82 43 16.8	3,154
Road crossing	32 48 09.1	82 43 06.6	5,712
Road crossing, second class	32 47 37.6	82 43 08.8	3,190
Washington-Johnson county line, center of track	32 47 05.3	82 42 52.6	3,539
Donovan flag station, about 40 feet north of, public-road crossing	32 46 27.8	82 42 40.9	3,929
Intersection of railway tangent; angle, 8° 30′	32 45 50.2	82 43 01.0	4,160

Magnetic declination for south border of quadrangle, 1° 43′ E.

East along highways near southeast corner of quadrangle.

Forks of road	32 45 02.6	82 30 57.5	.....
Forks of road, 27 feet northwest to mail box	32 46 07.3	82 30 54.8	6,540
Angle of 63° in road, center line both ways	32 45 29.8	82 30 38.1	4,053

Magnetic declination for southwest part of quadrangle, 1° 08′ E.

DEARING QUADRANGLE.

Along highways near east border of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Little Uchee Creek, 0.3 mile north of, T road east	33 29 26.0	82 16 29.3	.....
Grovetown, 4 miles northwest of, at crossroads of Wrightsboro and old Louisville and Appling roads, 300 feet northeast to large house, 40 feet southeast to intersection of roads; iron post stamped "Prim. Trav. Sta. No. 14, 1918 H;" 1,720 feet south to nail in hub on west side of road; azimuth, 8° 32′ 00″; 425 feet east to nail in hub on north side of road; azimuth, 277° 37′ 00″	33 28 27.6	82 15 46.2	.....
Negro church, T road west at	33 28 02.0	82 15 49.0	2,585
Negro Central School, crossroads at	33 26 37.5	82 15 23.3	8,821
Negro church at east side of road, opposite	33 24 58.6	82 15 15.6	10,020
Berzelia, railroad crossing at	33 24 23.5	82 15 07.0	3,621

DEARING QUADRANGLE—Continued.

Along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Central School, forks of road at	33 28 34.9	82 16 53.8	
Gin, T road north at, 40 feet south to tank	33 28 45.3	82 18 13.2	6,807
Large house on south side of road, at entrance	33 29 07.0	82 18 31.9	7,021
C. B. Boe's house, three corners at	33 29 19.3	82 20 56.7	7,296
Grovetown, 11 miles northwest of, at crossroads near sawmill, 20 feet southeast to crossroads, 300 feet northeast to sawmill, 150 feet southeast to bridge; iron post stamped "Prim. Trav. Sta. No. 17, 1918 H"; 640 feet west to nail in hub on south side of road, azimuth, 100° 29′ 30″; 311 feet southeast to nail in hub on south side of road azimuth, 302° 38′ 50″	33 29 27.5	82 21 30.5	2,977
Schoolhouse on north side of road, road opposite	33 29 55.3	82 22 41.8	6,662
White house, second-class road southeast at	33 29 32.6	82 24 15.6	
F. C. Stones's house, three corners at	33 28 49.3	82 25 35.0	8,052
Road north, 30 feet northwest to green mail box	33 28 54.2	82 26 31.3	4,792
Negro church and schoolhouse, entrance to	33 28 41.1	82 27 09.5	3,501
Driveway to house, four rows of trees, road opposite	33 28 33.1	82 28 21.2	6,135
Thomson, 1 mile northeast of, on south side of road, in front of of brick house owned by H. C. Clary; on bank; iron post stamped "Prim. Trav. Sta. No. 18, 1918 H"; 600 feet southwest, nail in hub, on south side of road, azimuth, 70° 54′ 10″; 1,075 feet northeast, nail in hub, on north side of road, azimuth, 245° 45′ 4″	33 28 10.0	82 29 16.3	5,218

Along highways near west border of quadrangle.

Thomson, 1.5 miles south of, second-class road west, 50 feet northwest to yellow house	33 26 47.8	82 29 40.6	
Crossroads, 80 feet northeast to house, 400 feet south to church	33 26 09.0	82 29 14.0	4,523
T road north, 40 feet south to house	33 24 50.8	82 29 05.5	7,942
Forks of road to west, 20 feet north to five mail boxes	33 24 03.2	82 28 58.6	4,848
Negro house, road opposite, 20 feet east to mail box numbered 30	33 22 59.6	82 28 23.7	7,071
Hubb's Mill, 100 feet southwest of, on north side of road, 20 feet northeast of north end of bridge; iron post stamped "Prim. Trav. Sta. No. 19, 1918 H"; 640 feet southeast, nail in hub, on south side of road, azimuth, 306° 11′ 00″; 148 feet southwest, nail in hub, on south side of road, azimuth, 50° 49′ 50″	33 22 06.2	82 27 55.5	5,911

Along highways through center of quadrangle.

New house, on south side of road, 20 feet south to mail box 82	33 21 50.3	82 26 53.0	5,541
Small store, road opposite	33 21 25.4	82 25 58.9	5,229
Three corners at negro church	33 20 58.0	82 25 25.6	3,954
Mill, three corners west of, 70 feet southwest to well	33 20 36.3	82 24 53.6	3,490
Second-class fork to southwest	33 20 17.6	82 23 53.1	5,465
R. L. Luckie's house, road opposite	33 19 50.2	82 23 12.8	4,398
Crossroads, 100 feet northeast to house	33 19 34.8	82 22 23.6	4,453
Crossroads, 20 feet south to mail boxes 46 and 47	33 20 15.5	82 21 25.9	6,395
Avalon, 2 miles west of, on south side of road, 100 feet southwest of T road north, 2 feet south of telephone pole; iron post stamped "Prim. Trav. Sta. No. 20, 1918 H"; 620 feet northeast is nail in hub on north side of road, azimuth, 211° 25′ 50″; 657 feet southwest is nail in hub on south side of road, azimuth, 30° 13′ 00″	33 20 42.9	82 21 02.6	3,400
Avalon, four corners at	33 21 19.1	82 19 34.7	8,300
Second-class crossroads	33 21 09.0	82 18 20.0	6,414
Bridge at mill	33 21 03.0	82 17 27.3	4,510
Crossroads, 300 feet northeast to house	33 21 20.3	82 16 33.6	4,883
Bridge at mill	33 21 57.2	82 15 11.6	7,893
Berzelia, iron post stamped "Prim. Trav. Sta. No. 15, 1918 H" (described in Hephzibah quadrangle)	33 22 44.8	82 13 45.6	8,733

Along highways near west border of quadrangle.

Crossroads, 40 feet northeast to three mail boxes	33 21 17.2	82 29 33.0	

DEARING QUADRANGLE—Continued.

Along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Railroad crossing, 200 feet southwest to house	33 15 21.2	82 29 02.3	.....
Steep Hollow schoolhouse, crossroads	33 15 38.0	82 28 44.0	2,302
Forks of road to northeast, 40 feet east to two mail boxes	33 15 09.2	82 27 44.2	5,842

Magnetic declination for north border of quadrangle, 1° 12′ E.; for west border of quadrangle, 1° 20′ E.; for east border of quadrangle, 0° 49′ E.; for south border of quadrangle, 1° 16′ E.

Along highways. (By O. B. Walsh in 1918.)

Crossroads, at center of north and south road, 10 feet north of center line of east and west road, 23.2 feet west of mail box	33 15 37.32	82 26 33.16	.....
Crossroads	33 15 48.94	82 26 02.19	2,877
Cedar Grove schoolhouse, 4 feet north of	33 15 56.35	82 25 48.93	1,349
Crossroads in front of J. L. Wren's house, 5 miles southwest of town of Wren	33 16 06.12	82 25 15.42	3,009
At road intersection, on east edge of main road, near water mill, 8 feet out from blazed oak tree; hub	33 16 34.83	82 23 16.80	10,478
Crossroads	33 16 52.49	82 23 03.31	2,119
Second-class road south	33 17 03.11	82 22 35.53	2,589
Road crossing in grass triangle, 15 feet south of Isaac Lewis's mail box; hub	33 17 24.93	82 22 00.98	3,667
Crossroads	33 17 18.82	82 20 59.04	5,292
Center of triangle at road crossing, 20 feet southeast of center line of both roads	33 16 46.36	82 18 46.71	11,703
Center of most southerly bridge over Brier Creek Swamp, Richmond-Jefferson county line	33 16 35.56	82 17 47.30	5,159
T road north, 22 feet northwest of W. H. Parker's mail box	33 17 31.73	82 16 42.70	7,892
North edge of main road at T road north	33 17 39.10	82 16 05.94	3,205
Center line of road, 10 feet south of, at gate leading to McNair schoolhouse	33 17 49.38	82 15 28.57	3,335
Center of wooden bridge	33 17 57.63	82 15 12.60	1,588

EGYPT QUADRANGLE.

South along Seaboard Air Line Ry. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Clyo station, about 75 feet north of, 50 feet east of track; azimuth to cross on Lutheran Church spire, 220° 49′ 00″; iron post stamped "Prim. Trav. Sta. No. 81, 1917"	32 29 02.6	81 16 02.9	.....
Public-road crossing	32 28 44.3	81 16 00.5	1,869
Road crossing	32 27 51.2	81 15 52.0	5,415
Do	32 26 22.5	81 15 37.7	9,045
Berry's span, road crossing, 200 feet south of switch stand	32 25 42.9	81 15 31.3	4,045
Road crossing	32 24 41.3	81 15 21.4	6,285
Do	32 24 13.8	81 15 16.9	2,805
Do	32 23 29.1	81 15 09.7	4,560
Second-class road crossing	32 23 00.4	81 15 05.0	2,925
Stillwell station, opposite south end of, 40 feet east of center of track, 25 feet north of public-road crossing; iron post stamped "Prim. Trav. Sta. No. 82, 1917 Mac."	32 22 40.5	81 15 01.3	2,039

Northwest along Savannah & Atlanta Ry. (By Oscar Jones in 1918.)

Road crossing	32 15 23.0	81 15 06.7	.....
Center of trestle	32 16 11.1	81 15 32.1	5,330
Blanford, road crossing	32 16 42.7	81 15 48.9	3,510
Road crossing	32 17 03.7	81 16 00.0	2,320
Do	32 17 26.0	81 16 11.8	2,470
Road crossing, at sawmill	32 18 14.1	81 16 37.2	5,330
Road crossing	32 18 48.6	81 16 55.5	3,830
Do	32 19 10.7	81 17 07.1	2,440
Do	32 19 41.4	81 17 23.4	3,410

EGYPT QUADRANGLE—Continued.

Northwest along Savannah & Atlanta Ry. (By Oscar Jones in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	32 20 14.1	81 17 40.7	3,620
Do	32 21 04.4	81 18 07.2	5,570
Springfield, 10 feet west of track, 6.5 feet south of crossing sign, 70 feet northwest of depot; iron post stamped "Prim. Trav. Sta. No. 7, 1918 J"	32 22 00.6	81 18 38.5	6,281
Trestle, north end	32 22 30.7	81 19 07.0	3,900
Road crossing	32 23 03.0	81 19 37.8	4,200
Do	32 23 32.7	81 20 06.1	3,860
Do	32 24 25.2	81 20 56.4	6,840
Do	32 24 48.7	81 21 18.8	3,050
Trestle, north end of	32 25 23.7	81 21 52.1	4,550
Road crossing	32 25 29.9	81 21 57.9	800
Do	32 26 17.2	81 22 37.6	5,870
Do	32 26 38.9	81 22 55.8	2,690
Road crossing at school	32 27 05.0	81 23 17.7	3,240
Road crossing	32 27 38.3	81 23 45.7	4,130
Shawnee station, 200 feet north of, 30 feet east of track; iron post stamped "Prim. Trav. Sta. No. 8, 1918 J"	32 28 36.6	81 24 34.4	7,222
Road crossing	32 29 00.6	81 24 54.8	2,988
Trestle, north end of	32 29 20.3	81 25 11.3	2,440
Ardmore, road crossing at	32 29 53.5	81 25 39.2	4,120

Southeast along highways in northeast corner of quadrangle.

Road fork	32 29 59.0	81 16 47.7	.....
Do	32 29 42.5	81 16 37.6	1,880
Clyo, "Prim. Trav. Sta. No. 81 Mac." (previously described)	32 29 02.6	81 16 02.9	5,000

Northwest along Central of Georgia Ry.

Center of trestle 24.9	32 15 18.9	81 23 28.0	.....
Marlow, road crossing	32 16 15.0	81 23 29.0	5,670
Pineola station, 29 feet east of intersection of Central of Georgia and Midland railroads; iron post stamped "Prim. Trav. Sta. No. 3, J 1918"	32 17 11.5	81 23 29.6	5,714
Road crossing	32 18 42.2	81 23 31.5	9,170
Do	32 19 08.3	81 23 31.9	2,630
Guyton station, opposite semaphore, center of track	32 19 56.5	81 23 37.3	4,894
Road crossing	32 20 32.3	81 23 57.6	4,012
Do	32 20 58.2	81 24 14.0	2,980
Do	32 21 31.6	81 24 35.1	3,830
Do	32 21 54.2	81 24 49.3	2,580
Do	32 22 29.0	81 25 11.3	3,990
Do	32 23 03.0	81 25 32.8	3,900
Tusculum, road crossing	32 23 34.4	81 25 52.7	3,600
Road crossing	32 24 19.4	81 26 21.2	5,170
Do	32 24 52.0	81 26 41.9	3,740
Do	32 25 27.2	81 27 04.2	4,040
Do	32 25 43.4	81 27 14.4	1,850
Do	32 26 16.2	81 27 35.2	3,770
Do	32 27 07.1	81 28 07.5	5,840
Egypt station, 380 feet north of, 35 feet east of track; iron post stamped "Prim. Trav. Sta. No. 4, 1918 J"	32 27 45.6	81 28 31.5	4,397
Road crossing	32 28 17.5	81 28 52.2	3,684
Do	32 29 11.2	81 29 26.2	6,160
Do	32 29 41.2	81 29 45.2	3,440

Magnetic declination along Central of Georgia Ry. (2 observations only), 0.2′ E.

Northwest along Savannah & Statesboro Ry. in southwest corner of quadrangle. (By Oscar Jones in 1918.)

Olney, road crossing at	32 15 25.8	81 27 42.5	.....
Road crossing	32 16 07.5	81 28 07.8	4,740
Do	32 16 25.6	81 28 18.8	2,060
Ivanhoe, road crossing at	32 17 02.1	81 28 40.9	4,140
Road crossing	32 17 55.8	81 29 13.4	6,100
Hubert, road crossing at	32 18 22.8	81 29 29.8	3,070

EULONIA QUADRANGLE.

From Crescent northwest along Georgia Coast & Piedmont R. R. to Darien Junction. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	31 30 22.2	81 21 55.9	.....
Crescent, road crossing	31 30 33.2	81 22 15.2	2,080
Road crossing	31 30 21.8	81 23 06.5	4,590
Do	31 30 24.1	81 23 38.7	2,805
Do	31 30 50.3	81 24 42.5	6,121
Do	31 31 12.4	81 25 22.0	4,080
Eulonia, road crossing	31 31 50.1	81 25 42.8	4,220
Road crossing	31 32 21.4	81 26 14.5	4,188
Spur	31 32 33.0	81 26 25.2	1,496
Road crossing	31 32 58.4	81 27 10.6	4,690
Center of small trestle	31 33 24.3	81 27 51.6	4,404
Do	31 34 41.4	81 29 01.1	9,840
Do	31 35 14.7	81 29 31.1	4,260
Road crossing	31 35 23.1	81 29 42.2	1,280
Warsaw (Darien Junction) crossing of Seaboard Air Line and Georgia, Coast & Piedmont railroads	31 35 28.4	81 30 00.7	1,688

Along Seaboard Air Line Ry. (By E. L. McNair in 1917.)

Log road of Southern Timber Co. crossing railroad	31 44 31.4	81 25 48.2	.....
Riceboro station, 1,075 feet north of, public-road crossing	31 44 07.4	81 25 59.3	2,606
Riceboro, switchstand at south end of siding	31 43 35.3	81 26 14.2	3,496
Riceboro station, 2.50 miles south of, public-road crossing	31 42 21.4	81 26 48.6	8,030
Road crossing, at switchstand, at turnout to lumber mill	31 40 47.0	81 27 32.6	10,273
Private-road crossing	31 39 53.3	81 27 57.4	5,828
Second-class road crossing	31 39 29.8	81 28 08.3	2,555
Milepost 100, center of track opposite	31 38 50.3	81 28 26.7	4,295
Jones station, road crossing at	31 38 01.0	81 28 49.6	5,360
Milepost 98, center of track at	31 37 13.1	81 29 11.9	5,211
Brick yard, switch stand at spur to	31 36 43.7	81 29 25.6	3,200

Magnetic declination for quadrangle, 0° 15′ E.

EVERETT QUADRANGLE.

From Sterling northwest along Southern Ry. to Everett, thence south along Seaboard Air Line Ry. to Thalmann. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Second-class road crossing	31 15 14.6	81 31 58.9	.....
Sterling, 150 feet south of station, road crossing	31 16 09.6	81 32 41.8	6,690
Road crossing	31 16 52.7	81 33 15.3	5,230
Do	31 17 52.9	81 34 02.2	7,319
Zuta, 240 feet south of station, road crossing	31 18 54.6	81 34 50.3	7,500
Sawmill, road crossing opposite	31 20 12.3	81 35 50.9	9,450
Center of trestle	31 20 48.0	81 36 18.6	4,330
Bellevista, road crossing	31 21 35.5	81 36 55.7	5,780
Center of trestle	31 22 21.2	81 37 31.4	5,560
Do	31 22 46.2	81 37 50.8	3,030
Everett, iron post stamped "Prim. Trav. Sta. No. 2, Elev. 16,1917"	31 23 29.8	81 38 25.0	5,308
Center of trestle	31 21 38.2	81 39 27.1	12,500
Do	31 21 01.0	81 39 59.9	4,702
Do	31 20 20.3	81 40 35.8	5,160
Road crossing	31 19 38.9	81 40 54.3	5,160
Do	31 19 38.9	81 40 54.3	4,485
Center of trestle	81 18 44.6	81 41 07.8	5,609
Thalmann, crossing of Seaboard Air Line and Atlanta, Birmingham & Atlantic railroads	31 17 37.1	81 41 24.5	6,964

EVERETT QUADRANGLE—Continued.

From Everett northwest along Southern Ry. to northwest corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	31 24 13.1	81 38 58.6	5,260
Center of trestle	31 24 41.6	81 39 20.8	3,460
Road crossing	31 25 04.7	81 39 38.9	2,810
Tramway crossing	31 25 48.5	81 40 27.2	6,094
Mount Pleasant, road crossing	31 26 04.1	81 40 45.0	2,200
Road crossing	31 26 29.4	81 41 14.0	3,590
Do	31 27 02.7	81 41 52.2	4,720
Do	31 27 22.4	81 42 14.7	2,780
Center of trestle	31 27 56.3	81 42 53.5	4,800
Grangerville, opposite signpost, center of track	31 28 59.6	81 44 06.1	8,970
Road crossing	31 29 25.0	81 44 35.4	3,610
Along highways in northwest part of quadrangle.			
Crossroads	31 28 22.3	81 44 24.6	.....
Road forks	31 27 41.6	81 44 32.6	4,167
Milepost 15	31 26 36.9	81 44 48.2	6,680
Along Atlanta, Birmingham & Atlantic R. R. to Thalmann, thence south on Seaboard Air Line Ry. to Bladen.			
Road crossing	31 15 23.7	81 33 11.0	.....
Dixie highway crossing	31 15 36.2	81 33 29.7	2,060
Center of trestle	31 16 04.3	81 34 31.1	6,042
Center of trestle, 160 feet east of milepost 14	31 15 57.8	81 34 59.8	2,572
West abutment of trestle	31 15 47.3	81 35 34.6	3,201
Dixie highway crossing	31 15 41.6	81 35 50.3	1,484
Road crossing, at water tank	31 15 24.0	81 36 46.6	5,203
Road crossing	31 15 33.2	81 37 11.6	2,361
Center of culvert	31 16 26.7	81 39 00.8	10,910
Road crossing	31 16 52.5	81 39 53.3	5,251
Thalmann, crossing of Atlanta, Birmingham & Atlantic and Seaboard Air Line railroads, center of track	31 17 37.1	81 41 24.5	9,114
Thalmann, 58 feet northwest from above crossing; iron post stamped "Prim. Trav. Sta. No. 3, 1917"	31 17 37.63	81 41 24.8	58
Thalmann, 1.7 miles southwest of, center of trestle	31 16 06.8	81 41 46.9	9,328
Road crossing	31 15 26.2	81 41 57.0	4,200
From Thalmann west along Atlanta, Birmingham & Atlantic R. R.			
Tramway crossing	31 17 55.3	81 42 01.8	.....
Road crossing	31 18 31.5	81 43 15.7	7,380
Glynn-Wayne county line, road crossing	31 18 51.4	81 43 58.9	4,249
From Everett northeast along Seaboard Air Line Ry.			
Everett bench-mark post 2 (previously described)	31 23 29.8	81 38 25.0	.....
Center of trestle	31 24 05.1	81 38 04.9	3,966
Road crossing	31 24 31.0	81 37 42.4	3,260
Do	31 25 21.0	81 36 58.6	6,317
South abutment of trestle	31 25 29.1	81 36 43.7	1,520
Altamaha River, south end of steel draw span	31 25 35.6	81 36 20.7	2,100
North abutment of long trestle	31 26 01.4	81 35 34.0	4,812
South end of switch	31 26 58.7	81 34 15.8	8,910
Station 637, at junction of line to Darien	31 27 18.0	81 33 50.0	2,960
Cox, road crossing	31 27 18.8	81 33 49.2	100
Road crossing	31 28 18.0	81 33 20.7	.....
North abutment of trestle	31 28 45.4	81 33 08.0	2,980
Center of small trestle	31 29 34.1	81 32 45.4	5,290
From Cox southeast along highways.			
Road forks at box 33	31 26 55.7	81 32 58.4	.....
Road forks at school	31 26 24.4	81 32 00.5	5,928
Road forks at boxes 37 and 38	31 26 26.4	81 31 23.7	3,209
Second-class road forks	31 26 02.0	81 30 23.7	5,752

FOLKSTON QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
St. Mary's River, center of steel truss bridge over, State line between Florida and Georgia	30 47 22.4	82 00 07.4	.....
Public-road crossing, center of double-track roadbed	30 48 52.2	82 00 11.6	9,077
Folkston siding, south end of, between tracks	30 49 22.5	82 00 20.8	3,161
Folkston, opposite railroad station, 40 feet east of center of tracks, 60 feet north of street, 8 feet north of telephone pole; iron post with cap, "U. S. C. &. G. S. b. m. Q_5"; azimuth to top of most easterly one of four semaphores on overhead truss about 1,150 feet north of post, 163° 57′ 15″	30 49 52.4	82 00 29.3	3,112
Milepost "Port Tampa 290," east rail opposite	30 50 22.8	82 00 38.9	3,184
Public-road crossing, east rail	30 51 15 5	82 00 54.9	5,500
Public-road crossing	30 51 42.9	82 01 03.0	2,854
Burch tower, 0.25 mile south of, at south end of siding, east rail	30 52 43.8	82 01 07.9	6,169
Burch siding, switchstand at north end of, east rail	30 53 16.6	82 01 10.2	3,315
Road crossing, east rail	30 54 04.4	82 01 13.7	4,844
Milepost "Port Tampa 295," east rail opposite	30 54 41.3	82 01 16.4	3,730
Newell siding, at switchstand at south end of east rail	30 55 55.1	82 01 21.7	7,470
Newell (flag station), 70 feet east of, center of track, 40 feet south of road crossing track, on bank on west side of ditch; iron post stamped "Prim. Trav. Sta. No. 5, 1917, Mac."; azimuth to switchstand about 3,300 feet south of post, 357° 46′ 15″	30 56 27.5	82 01 23.3	3,276
Road crossing, east rail at	30 57 01.9	82 01 26.5	3,489
Do	30 57 58.1	82 01 30.6	5,685
Do	30 58 21.6	82 01 32.3	2,385
Do	30 59 46.8	82 01 38.5	8,620

Magnetic declination for line, 1° 18′ E.

From Folkston southwest along highways to center of south border of quadrangle. (Single spur line by E. L. McNair in 1917.) (Positions unreliable.)

Folkston, U. S. C. & G. S. b. m. (described in preceding list)	30 49 52.4	82 00 29.3	.....
Road forks	30 49 11,0	82 01 11.2	5,558
T road west to Mattox settlement	30 48 14.6	82 01 55.9	6,895
Second-class crossroads	30 48 26.4	82 02 45.5	4,488
Road forks, at farm house, 6 feet from picket fence	30 48 27.9	82 03 27.7	3,682
Crossroads at F. M. Roddenberry's mail box, near corner of fenced field	30 48 36.2	82 04 10.7	3,841
T road east, near road forks northwest	30 48 00.6	82 04 12.2	3,604
Angle in road	30 47 45.4	82 04 07.9	1,572
Second-class crossroads	30 46 47.4	82 04 29.3	6,152
Altman's, C. J., house, at corner of picket fence, center of road	30 46 21.8	82 04 48.3	3,074
Camp Cornelia, opposite last house on road into, 20 feet northwest of road track, about 250 feet northeast of small fenced field near road fork, in root of pine tree 3 feet north of trunk; nail	30 45 53.6	82 05 05.1	3,204
Abandoned tram road crossing	30 45 37.0	82 05 26.7	2,522
Tram road grade crossing on old dim road	30 45 05.9	82 06 32.7	6,566

Along highways in southwest part of quadrangle. (Single spur line by E. L. McNair in 1917. Positions unreliable.)

Canal, north bank, in root of double cypress tree close to water; copper nail and washer	30 45 12.4	82 12 31.5	.....
Canal, south bank, about 15 feet from water's edge, in pine tree; copper nail and washer	30 45 28.4	82 13 04.8	3,322
Canal, south bank, in root of cypress tree; copper nail	30 45 38.6	82 13 33.8	2,733
Canal, 20 feet west of bank, in root of cypress tree; copper nail and washer	30 46 22.9	82 14 03.0	5,148
Camp ground, on west bank of canal, in root of bay tree, painted "U. S. E."; copper nail	30 46 44.3	82 14 06.2	2,182
Canal, 3.5 feet south of bank, visible from canal through cutting, in root of cypress tree; copper nail and washer	30 47 14.9	82 14 25.4	3,520
Canal, west bank, in pine tree; copper nail	30 47 46.5	82 14 46.7	3,689
Canal, 25 feet west of bank, in root of sweet bay tree; copper nail	30 47 58.5	82 14 47.9	1,217
Canal, west bank, in 8-inch pine tree; copper nail: tree painted "U. S. I."	30 48 26.1	82 14 53.0	2,822
Okefenokee Swamp, just south of Jacksons Bay, near forks of canal, 3 branches, one dry, on west side of main canal, north end of a bunch of cypress timber and brush; iron post stamped "Prim. Trav. Sta. No. 53, 1917 Mac."	30 48 51.0	82 15 04.6	2,712

Magnetic declination for south part of quadrangle, 1.2° E.

FOLKSTON QUADRANGLE—Continued.

From Folkston southwest along highways to south border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Folkston, (U. S. C. & G. S. station Q_5)	30 49 52.41	82 00 29.34	.....
Road forks, roads southwest to St. George	30 49 46.4	82 00 51.4	2,012
Milepost 1	30 49 23.3	82 01 02.5	2,531
Road forks	30 49 10.8	82 01 11.3	1,473
Milepost 2	30 48 39.1	82 01 36.6	3,888
T road west	30 48 14.6	82 01 55.9	2,992
Milepost 3	30 47 52.5	82 02 08.6	2,495
Folkston, 3.2 miles south of, on road to St. George, 20 feet west of fork of road to Traders Hill; iron post stamped "Prim. Trav. Sta. No. 15, S 1917"	30 47 40.2	82 02 15.9	1,397
Crossroads	30 47 24.4	82 02 30.5	2,032
Do	30 46 52.6	82 03 01.2	4,184
Road west, south of church	30 46 26.2	82 03 26.8	3,480
Prospect Church, crossroads at	30 45 51.7	82 04 00.2	4,536
Crossroads to northwest at house	30 45 32.6	82 04 12.5	2,212

Magnetic declination for southeast quarter of quadrangle, 1.4° E.

GARFIELD QUADRANGLE.

West and south along highways in southeast corner of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork	32 31 04.4	82 00 07.4	.....
Southeast corner of crossing of Statesboro-Swainsboro and Metter-Aaron roads, 10 feet west of mail box 500, feet south of residence; iron post stamped "Prim. Trav. Sta. No. 20, 1918 J"	32 31 27.8	82 01 08.0	6,521
Road fork at creek crossing	32 30 35.1	82 01 11.6	5,339

Magnetic declination for southeast part of quadrangle, 0.6° E.

North along highways near west border of quadrangle. (By E. L. McNair in 1918.)

Forks of road	32 33 54.7	82 14 59.2	.....
Public crossroads	32 34 08.4	82 14 06.2	4,741
Forks of road	32 34 40.6	82 14 16.8	3,375
Do	32 35 09.9	82 14 25.0	3,045
Crossroads	32 36 09.9	82 14 22.1	6,070
Angle of 11° 15′ in road	32 36 41.3	82 14 17.4	3,248
Road west	32 37 29.4	82 14 28.7	4,902
Center line of road, in line with T road west along fence, 35 feet north of mail box	32 37 58.6	82 14 14.9	3,186
Road fork, junction with Swainsboro-Garfield road	32 39 04.0	82 13 19.8	8,117
Swainsboro, about 7.5 miles northeast of, on road to Canoochee, near forks of road, a settlement road leads north to Summertown, 300 west of tenant farmhouse belonging to Ben Brinson, 30 feet northwest of center of main road; iron post stamped "Prim. Trav. Sta. No. 133, 1918 Mac"	32 39 04.2	82 13 36.4	1,419
Forks of road	32 39 53.5	82 14 05.4	5,558
T road east	32 40 52.5	82 14 15.2	6,026
Forks of road at fence corner, 500 feet north of Mr. Greenway's house	32 41 28.9	82 14 25.2	3,776
Forks of road	32 42 19.0	82 14 45.3	5,340
Crossroads	32 43 08.1	82 14 41.8	4,973
Public crossroads	32 43 44.3	82 14 35.4	3,700

Along highways near south border of quadrangle. (See Stillmore quadrangle.)

Crossroads about 1,100 feet northeast of Beulah Church	32 30 02.6	82 09 15.0	.....

GARFIELD QUADRANGLE—Continued.

Northeast along highways near southeast corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork at corner of fence	32 30 21.4	82 02 24.6	.....
Center of road opposite gateway and lane east through field	32 30 43.1	82 01 58.3	3,142
T road N. 50° E.	32 30 57.2	82 01 19.8	3,594
Metter, 10 miles north of; Prim. Trav. Sta. No. 20, Jones (tie)	32 31 27.8	82 01 08.0	3,253

Magnetic declination for west border of quadrangle, 0.8° E.; for northeast part of quadrangle, 0.6° E.

Southwest along Georgia & Florida Ry. through center of quadrangle. (By E. L. McNair in 1918.)

Road crossing	32 44 48.0	82 00 22.0	.....
Do	32 43 57.7	82 01 20.6	7,131
Butts station, road crossing 50 feet southwest of	32 43 34.5	82 01 42.1	2,978
Road crossing	32 42 31.3	82 02 09.3	6,806
Do	32 42 11.2	82 03 05.0	5,173
Thrift station, road crossing	32 41 59.3	82 03 20.9	1,818
Intersection of tangent	32 41 30.1	82 03 58.6	4,370
Road crossing	32 40 29.3	82 04 36.1	6,926
Jenkins-Emanuel county line, crossing of	32 39 47.4	82 04 58.4	4,651
Road crossing	32 39 21.1	82 05 28.7	3,705
Garfield station, 25 feet west of center of track, 20 feet east of center of street, 12 feet north of telegraph pole; iron post stamped "Prim. Trav. Sta. No. 128, 1918 Mac."; azimuth to church steeple, 79°43′39″	32 39 02.8	82 05 44.0	2,261
Garfield, crossing of Georgia & Florida and Midland railroads	32 38 37.1	82 05 49.9	2,654
Road crossing	32 38 11.0	82 06 13.3	3,305
Do	32 37 46.8	82 06 36.4	3,154
Intersection of tangent	32 37 27.1	82 06 54.8	2,530
Road crossing	32 36 55.5	82 07 07.3	3,365
Milepost 26, center of track opposite	32 36 14.3	82 07 26.1	4,464
Road crossing	32 35 51.4	82 08 12.1	4,561
Summit station, road crossing 430 feet northeast of	32 35 10.3	82 08 53.2	5,446
Road crossing	32 35 00.8	82 09 15.1	2,100
Graymont station, road crossing 230 feet northeast of	32 34 44.5	82 09 46.0	3,118
Road crossing	32 34 20.0	82 10 10.6	3,254
Do	32 33 41.0	82 10 28.5	3,995
Second-class road crossing	32 33 06.5	82 10 53.3	4,591
Wade station, opposite and across track from, 20 feet northeast of center of track; iron post stamped "Prim. Trav. Sta. No. 29, 1918 Mac."; azimuth to left edge of chimney on house about 600 feet distant, 51° 46′ 55″	32 32 14.2	82 11 35.5	6,398
Milepost 19, center of track opposite	32 31 42.3	82 11 48.9	3,410
Road crossing	32 31 03.8	82 11 50.1	3,900
Do	32 30 29.7	82 11 55.0	3,471

Along highways near north border of quadrangle.

Crossroads, 30 feet southeast to two mail boxes	32 43 44.3	82 14 35.3	.....
Church, road north to	32 43 33.2	82 13 24.3	6,170
Railroad crossing	32 43 15.8	82 12 50.6	3,376
Smith's store, junction of roads 2 miles south of	32 42 20.4	82 11 57.5	7,195
Smith's store, T road east on fourth mile south of	32 43 49.8	82 12 09.5	9,084
Schoolhouse, second-class crossroads 300 feet southeast of	32 44 13.9	82 11 26.4	4,417
Second-class crossroads, 40 feet southwest to high burnt stump	32 44 18.2	82 10 44.7	3,590

Along Midland Ry. northwest through center of quadrangle.

Road crossing	32 34 20.9	82 00 25.5	.....
Do	32 34 51.2	82 01 18.6	5,487
Do	32 35 18.8	82 01 49.9	3,867
Do	32 36 34.7	82 02 48.0	5,219
Do	32 36 17.3	82 03 25.0	5,343
Do	32 36 31.6	82 03 44.6	2,215
Milepost 56, center of track opposite	32 37 03.3	82 04 37.6	5,547
Road crossing	32 37 38.5	82 04 51.7	3,755
Do	32 38 52.5	82 06 50.4	.....
Do	32 39 04.9	82 07 41.4	4,530
Road crossing at Speer siding	32 39 19.8	82 08 43.1	5,478
Intersection of tangent	32 39 28.6	82 09 19.2	3,210
Road crossing	32 39 44.4	82 09 50.0	3,080
Canoochee station, road crossing at	32 40 20.6	82 10 45.7	6,000
Intersection of tangent	32 40 46.8	82 11 07.6	3,244
Road crossing	32 41 23.0	82 11 26.3	3,986
Do	32 41 47.5	82 11 43.3	2,874
Do	32 42 23.6	82 12 01.8	3,945
Intersection of tangent	32 42 49.0	82 12 25.5	3,299

GARFIELD QUADRANGLE—Continued.

Along highway near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road east	32 42 28.5	82 00 01.1	.....
Road fork	32 42 10.8	82 00 02.0	1,785
Do	32 37 48.5	82 00 11.2	.....
Aaron, 4 miles north of, about 1 mile northwest of corner of Jenkins, Emanuel, and Bulloch counties 30 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 126, 1918 Mac."	32 37 04.8	82 00 51.6	5,603
T road east	32 36 42.6	82 00 15.1	3,838
Dead tree just east of road, said to be corner tree to Jenkins, Bulloch, and Emanuel counties	32 36 24.6	82 00 05.5	2,000

Magnetic declination near east border of quadrangle, 0° 45′ E.; near north border of quadrangle, 0° 51′ E.

GLENNVILLE QUADRANGLE.

Along highways near east border of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Angle in road	31 52 14.2	81 45 38.4	.....
Taylor's Creek, 1 mile south of crossing of, 700 feet south of Dan Smiley's house, 20 feet west of road and in line with road southeast, 2 feet east of wire fence; iron post stamped "Prim. Trav. Sta. No. 29, 1917 Mac."; azimuth to east edge of brick chimney on Smiley's house, 172° 43′ 15″	31 52 28.2	81 45 55.4	2,037
Road forks, road northwest to Smiley postoffice	31 52 52.1	81 45 57.1	2,414
Angle in road	31 53 54.6	81 45 33.2	6,645
Road forks at 50° angle in main road	31 54 21.4	81 45 35.2	2,713
Angle in road	31 54 52.4	81 45 11.0	3,766

Magnetic declination for east border of quadrangle, 0° 44′ E.

Along Georgia Coast & Piedmont R. R. in south part of quadrangle. (By E. L. McNair in 1917.)

Second-class road crossing	31 45 19.6	81 47 26.9	.....
Public-road crossing	31 45 41.3	81 47 49.9	2,961
Road crossing at spur track	31 46 06.8	81 48 16.8	3,470
Intersection of tangents	31 46 57.9	81 49 10.6	6,951
Roderick flag station, 70 feet southwest of road crossing, 15 feet north of public road, 6 feet northeast of telephone pole; iron post stamped "Prim. Trav. Sta. No. 25, 1917 Mac."; azimuth to switch stand, 320° 33′ 30″	31 47 31.1	81 49 37.7	4,087

Along highways near south border of quadrangle.

Intersection of Macon-Darien road and road northeast to Roderick and Hinesville	31 47 22.1	81 49 52.0	1,530
Angle in road, point is 15 feet east of center of road and in line with road in both directions	31 47 59.7	81 50 42.0	5,750
T road north to Donald	31 48 04.6	81 51 07.9	2,285
Second-class crossroads	31 48 16.7	81 51 40.2	3,048
Crossroads, 165 feet southeast of bridge over creek	31 48 31.1	81 52 12.1	3,115
Road forks	31 49 04.7	81 52 51.1	4,780
Sam Howard's place, 0.75 mile southeast of, about opposite old road westward to Beard's Bluff, 20 feet north from center of road, 12 feet southeast of fence; iron post stamped "Prim. Trav. Sta. No. 26, 1917 Mac."	31 49 16.6	81 53 11.6	2,138
Mr. Blocker's house, large chinaberry tree in front of	31 48 45.3	81 55 20.6	11,573
Beard's Bluff, near ferry, on north bank of Altamaha River, in open grassy ground; iron post stamped "Prim. Trav. Sta. No. 27, 1917 Mac."; azimuth to nail in root of water-oak tree across river just below ferry landing, 323° 51′ 38″	31 47 25.3	81 57 29.0	13,717
Ferry landing, on south side of river, in root of water-oak tree; nail	31 47 16.7	81 57 21.7	1,067
Altamaha River, about 900 feet north of, 40 feet west of water channel, 6 feet north of blazed cypress tree, in top of cypress knee 8 feet high; nail	31 47 00.0	81 58 04.5	4,064
Crossroads	31 46 15.3	81 58 43.3	5,624
Road forks	31 45 30.9	81 58 12.9	5,205

Magnetic declination for south border of quadrangle, 0° 50′ E.

GLENNVILLE QUADRANGLE—Continued.

South along highways near west border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Mendes, 100 feet north of road crossing of Georgia Coast & Piedmont R. R	31 59 53.9	81 58 28.1	.....
Crossing of Georgia Coast & Piedmont R. R. and Stafford-Perry road	31 59 21.0	81 58 09.7	3,680
Road fork	31 58 49.0	81 58 33.1	3,811
Crossroads	31 57 56.1	81 59 16.4	6,521
Watermelon Creek, center of bridge over	31 52 52.7	81 59 43.7	.....
Crossroads	31 52 31.5	81 59 13.1	3,393
Center of small creek	31 52 13.3	81 58 50.9	2,649
Road fork	31 51 52.4	81 58 16.0	3,680
Mushmelon Creek, west end of bridge over	31 51 46.1	81 58 01.1	1,429
Road fork, 200 feet east of Debbos Branch	31 51 16.1	81 57 13.4	5,109
Beard's Creek, center of bridge over, known as Lumber Bridge	31 50 48.4	81 55 51.0	7,630
Center of road opposite milepost 4	31 50 27.2	81 55 52.7	2,150
Center of road opposite milepost 3	31 49 51.2	81 56 35.6	5,195
Center of road opposite milepost 2	31 49 04.9	81 57 01.0	5,163
Road fork, on east side of road, elevation "151" painted	31 48 29.9	81 57 13.1	3,693
Center of road opposite milepost 1	31 48 14.9	81 57 15.8	1,528
Beard's Bluff, "Prim. Trav. Sta. No. 27, Mac. 1917"	31 47 25.3	81 57 29.0	5,142

East along highways near center of quadrangle.

Road fork	31 56 02.7	81 59 11.9	.....
Do	31 56 00.3	81 58 37.3	2,988
Do	31 55 58.6	81 58 15.2	1,910
Medlock, T road north at store	31 55 57.1	81 57 55.2	1,730
Center of bridge	31 56 01.4	81 57 20.3	3,041
Road fork	31 56 17.1	81 56 47.2	3,260
Crossroads	31 56 23.4	81 56 16.3	2,729
Glennville, 150 feet east of Baptist Church, south side of street, west of Georgia Coast & Piedmont R. R.; iron post stamped "P. B. M. 175"; azimuth to Glennville water tower, 267° 45′	31 56 11.6	81 55 44.1	3,017
Road fork	31 55 43.8	81 54 37.8	6,372
Crossroads	31 55 23.8	81 53 53.4	4,327
Beard's Creek, east end of bridge over	31 55 26.6	81 52 54.0	5,126
Crossroads	31 55 42.2	81 52 13.3	3,842
Do	31 55 53.7	81 51 37.9	3,266
Do	31 55 56.7	81 50 58.9	3,366
Road fork	31 55 58.7	81 50 26.4	2,806
Road fork, Glennville, Savannah, and Walthourville	31 55 59.5	81 49 51.9	2,976
Center of road, opposite gate to house on north side of road	31 55 28.7	81 49 12.6	4,602
Crossroads	31 55 05.3	81 48 42.6	3,500
Road fork at turpentine still	31 54 38.8	81 48 08.4	3,990
Smiley, 60 feet southeast of store, in live-oak tree 4 feet in diameter	31 54 18.8	81 47 41.1	3,098
Taylor Creek, south end of bridge over	31 53 27.0	81 46 33.5	7,827
Center of bridge	31 52 59.5	81 46 07.6	3,568
Prim. Trav. Sta. No. 29, 1917 Mac	31 52 28.2	81 45 55.4	3,326

Magnetic declination along west border of quadrangle, 0.8° E.; for center of quadrangle, 0.6° E.

GOUGH QUADRANGLE.

Along Central of Georgia Ry. near east border of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 104, road crossing 550 feet south of	33 09 01.0	82 00 00.8	.....
Milepost 103, railroad track opposite	33 08 26.6	82 00 38.9	4,750
Milepost 102, railroad track opposite	33 07 40.2	82 01 00.6	5,030
Waynesboro, railroad crossing under Savannah & Atlanta Ry	33 06 23.8	82 01 07.5	7,748
Waynesboro, 1,000 feet south of station, 45 feet south of switch stand and 10 feet east of railroad, opposite east and west street on west side of railroad; iron post stamped "Prim. Trav. Sta. No. 5, 1918 H"; 730 feet south of post is point on east rail, azimuth, 338° 52′ 45″	33 05 20.9	82 00 38.1	6,831
Waynesboro, road crossing 1 mile south of	33 04 39.2	82 00 18.6	4,530

GOUGH QUADRANGLE—Continued.

Along Georgia & Florida Ry. near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 24, railroad track opposite	33 14 42.4	82 13 27.7	.....
Keysville, about 900 feet northeast of station, 38 feet south of railroad, on north edge of wagon road; iron post stamped Prim. Trav. Sta. No. 2, 1918 H"; 1,517 feet southeast of post to point on east rail, azimuth, 316° 22′ 40″	33 14 13.3	82 13 50.5	3,519
Keysville, road crossing 0.15 mile southwest of	33 12 59.1	82 14 01.4	7,560
Brush Creek, road crossing 5 miles north of, at whistle post	33 12 04.7	82 13 28.8	6,162
Brush Creek, road crossing 300 feet north of	33 11 45.3	82 13 14.0	2,322
Brush Creek, road crossing 2,000 feet south of	33 11 23.7	82 13 17.1	2,205
Road crossing 3,000 feet south of milepost 220	33 10 19.3	82 13 03.4	6,611
St. Clair, road crossing at station	33 09 03.4	82 13 05.4	7,682
St. Clair, railroad crossing at (Savannah & Atlanta Ry.)	33 08 43.8	82 13 09.5	2,000
Milepost 216, road crossing 1,600 feet north of	33 07 39.3	82 13 18.2	6,560
Milepost 215, crossing 1,400 feet north of	33 06 46.5	82 13 35.2	5,534
Gough, road crossing 1 mile north of	33 06 14.0	82 13 41.2	3,323
Gough, 40 feet southwest of station, on west side of railroad, on north edge of wagon road; iron post stamped "Prim. Trav. Sta. No. 7, 1918 H"; 600 feet south of post is point on east rail, azimuth, 354° 10′ 40″	33 05 26.9	82 13 36.8	4,777
Milepost 213, railroad track opposite	33 04 50.5	82 13 41.2	3,694
Milepost 212, railroad track opposite	33 04 08.0	82 14 14.9	5,167
Milepost 212, road crossing in cut 1,800 feet south of	33 03 54.4	82 14 29.4	1,852
Dixie Highway crossing	33 03 35.4	82 14 35.1	1,977
Vidette, road crossing at station	33 02 15.1	82 14 51.5	8,236
Milepost 209, road crossing 400 feet south of	33 01 34.3	82 14 53.4	4,127
Milepost 208, road crossing 200 feet north of	33 00 48.1	82 14 50.7	4,674
Milepost 207, road crossing 1,050 feet north of	33 00 04.5	82 14 40.8	4,480

Along highways near north border of quadrangle.

Keysville, 1.5 miles southeast of, bridge over creek	33 13 59.2	82 12 25.7	.....
Mill, three corners at	33 13 26.9	82 11 29.2	5,794
Milepost 15 miles to Waynesboro, county road opposite	33 12 56.3	82 11 01.6	3,876
County crossroads between mileposts 14 and 15	33 12 35.4	82 10 31.8	3,294
Milepost 13 miles to Waynesboro, county road opposite	33 12 30.1	82 09 09.2	7,032
Dye's Gin, crossroads at	33 12 36.5	82 08 47.7	1,940
T road north, 30 feet northwest to two mail boxes	33 12 33.1	82 07 48.5	5,040
Second-class T road south, 40 feet southwest to mail box	33 12 35.7	82 06 46.6	5,260
White house and windmill, three corners, 400 feet south of	33 12 23.7	82 05 57.2	4,365
Waynesboro, about 8 miles northwest of, 6.5 miles west of Greens Cut, in triangle at T road east; iron post stamped "Prim. Trav. Sta. No. 16, 1918 H"; 2,400 feet south to nail in hub on east side of road, azimuth, 345° 50′ 50″; 514 feet west to nail in hub on north side of road, azimuth, 68° 42′ 20″	33 12 02.9	82 04 49.7	6,103
T road east, 30 feet northeast to two mail boxes	33 11 30.8	82 04 42.8	3,290
Crossroads, 30 feet northwest to mail boxes	33 11 18.5	82 03 32.4	6,100
T road south, 20 feet northeast to mail box	33 11 20.9	82 02 47.2	3,848
T road south, 20 feet northeast to W. H. Walker's mail box	33 11 19.9	82 01 47.9	5,030
T road north at schoolhouse	33 11 21.6	82 00 54.0	4,584

Along highways east and west near center of quadrangle.

Gin, three corners at	33 03 46.2	82 13 22.0	.....
Store, crossroads at	33 03 35.8	82 12 17.9	5,557
White house, T road north to	33 03 36.0	82 10 57.5	6,838
Store, T road south at	33 03 18.0	82 09 32.8	7,430
Milepost 8, county road opposite	33 03 31.7	82 08 36.2	5,004
Milepost 7, county road opposite	33 03 51.6	82 07 38.1	5,339
Waynesboro, 6.5 miles west of, near negro cabin, on south side of road, 30 feet southeast of mail box numbered 12, at second-class T road north; iron post stamped "Prim. Trav. Sta. No 26, 1918 H"; 1,160 feet east is nail in hub on north side of road, azimuth, 274° 27′ 50″; 783 feet west is nail in hub on south side of road, azimuth, 94° 35′ 50″	33 03 57.0	82 07 07.1	2,690
Store, three corners at, 30 feet southwest to Goodrich signpost	33 03 40.9	82 06 10.1	5,111
Crossroads, 30 feet southeast to Goodrich signpost	33 03 47.6	82 05 13.1	4,901
Milepost 4, county road opposite	33 03 58.4	82 04 37.4	3,222
Milepost 3, county road opposite	33 04 39.0	82 03 57.0	5,347
Waynesboro, store 1 mile west of, four corners	33 05 04.1	82 02 17.6	8,830
Waynesboro, Prim. Trav. Sta. No. 5, 1918 (previously described)	33 05 20.9	82 00 38.1	8,617

GOUGH QUADRANGLE—Continued.

Along Savannah & Atlanta Ry. near east border of quadrangle. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Waynesboro, Prim. Trav. Sta. No. 5 (previously described)	33 05 20.9	82 00 38.1	.....
Road crossing	33 05 52.2	82 00 50.5	3,337
Do	33 05 57.5	82 00 00.4	4,296

Magnetic declination through center of quadrangle, 0° 43′ E.; for north border of quadrangle, 0° 48′ E.

GREENS CUT QUADRANGLE.

Along highways near southeast corner of quadrangle. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork	33 00 22.3	81 45 12.5	.....
Angle in road (Millen sheet)	32 59 11.6	81 45 17.7	7,147

Along highways near north border of quadrangle (spur line unchecked).

Pine tree, 12 feet south of center of road, in blaze 5 feet above ground; nail	33 12 00.3	81 50 37.0	.....
Center of bridge over creek	33 11 36.5	81 49 50.6	4,617
Pine tree, in blaze on north side of; nail	33 10 43.7	81 49 23.6	5,817
Crossroads	33 10 15.5	81 49 27.9	2,873
Road fork	33 09 54.8	81 48 57.1	3,348
Crossroads	33 09 21.6	81 47 35.7	7,686
Road to Hancock Landing and old Savannah-Augusta road, 30 feet south of crossing; iron post stamped "Prim. Trav. Sta. No. 124, 1918 Mac."; azimuth to nail in pine tree 600 feet distant, 334° 36′ 15″	33 09 19.7	81 47 30.8	460
Crossroads	33 08 50.8	81 47 11.2	3,357
Road fork	33 08 45.6	81 46 46.4	2,172
Crossroads	33 08 39.9	81 46 21.5	2,195

Spur line unchecked.

Road fork, road left goes down bluff	33 13 17.2	81 49 15.2	.....
Shell Bluff landing, on bank of Savannah River, in blaze on southeast side of gum tree; nail	33 13 38.9	81 49 30.8	2,555

Along highways through center of quadrangle.

Road fork	33 08 46.6	81 54 24.3	.....
Do	33 08 22.6	81 55 39.2	6,817
Do	33 08 16.3	81 56 09.6	2,660
T road, junction with Dixie Highway	33 07 50.8	81 57 29.5	7,270
Center of bridge	33 07 04.9	81 57 50.3	4,961
Road fork	33 06 31.0	81 58 46.1	5,850
Railroad crossing	33 05 57.4	82 00 00.5	7,185

Along Savannah & Atlanta Ry.

Creek crossing, 900 feet south of water tank	33 05 15.9	81 58 49.1	7,380
Road crossing, second class	33 04 44.3	81 58 21.7	3,963
Road crossing	33 04 08.5	81 57 50.7	4,480
Do	33 03 29.5	81 57 16.6	4,890
Road crossing at spur siding	33 02 45.2	81 56 15.1	6,896
Center of bridge	33 02 29.3	81 55 34.8	3,790
Road crossing	33 02 10.0	81 54 45.8	4,607
Do	33 01 48.2	81 53 50.5	5,200
Do	33 01 18.7	81 52 35.6	7,055
Alexander station, 640 feet north of, 35 feet north of track; iron post stamped "Prim. Trav. Sta. No. 105, 1918 Mac."	33 01 16.2	81 52 28.0	679
Road crossing	33 00 47.9	81 51 17.2	6,710
Do	33 00 27.7	81 50 26.1	4,810
Do	33 00 08.8	81 49 38.0	4,520

GREENS CUT QUADRANGLE—Continued.

Along highway near east and north borders of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork	33 04 22.7	81 46 40.2	11,017
Milepost 15, center of road opposite	33 05 11.2	81 48 40.0	11,310
Road fork	33 05 20.8	81 49 01.0	2,040
Road fork northeast	35 05 50.0	81 49 48.7	5,018
T road southwest, at store	33 06 18.8	81 50 38.9	5,168
Crossroads, at road northeast to Hancock's landing	33 06 48.5	81 51 15.6	4,333
Milepost 10, center of road opposite	33 07 56.3	81 52 26.8	9,146
T road northeast	33 08 26.4	81 53 00.7	4,184
Shell Bluff store, about 0.25 mile northeast from, 17 feet west of center of crossroads, 2 feet west of concrete milepost marked "McBean 7"; iron post stamped "Prim. Trav. Sta. No. 123, 1918 Mac."; azimuth to left edge of chimney on east end of white house, about 1,800 feet distant, 71° 27′ 37″	33 08 57.4	81 53 37.5	4,435
Crossroads	33 09 15.4	81 53 58.3	2,535
T roads northwest	33 10 24.4	81 53 11.8	8,010
Road fork	33 10 55.5	81 52 52.6	3,540
Do	33 11 31.4	81 52 15.0	4,830
Crossroads, Savannah–Augusta and Shell Bluff	33 12 34.2	81 50 50.9	9,557
Center of bridge over creek	33 13 31.3	81 51 23.0	6,373
Road fork northeast	33 14 11.2	81 53 08.0	9,797
Do	33 14 14.1	81 53 53.7	3,890
Road fork	33 14 12.1	81 54 42.2	4,128
T road northeast	33 14 18.6	81 55 23.5	3,565
Road fork	33 14 27.0	81 56 12.3	4,256

Magnetic declination for east border of quadrangle, 0° 45′ E.; for north border of quadrangle, 0° 22′ E.

Along Central of Georgia Ry. from McBean near west border of quadrangle to Idlewood. (By G. T. Hawkins in 1918.)

McBean, 160 feet south of railroad station, 20 feet south of wagon road, 10 feet east of railroad; iron post stamped "Prim. Trav. Sta. No. 4, 1918 H"; 1,200 feet southwest to point marked on east rail, azimuth, 44° 59′ 15″	33 14 34.9	81 57 03.9	.....
Milepost 111, railroad track opposite	33 14 13.6	81 57 41.4	3,837
Richmond–Burke county line on railroad bridge	33 13 41.6	81 58 37.4	5,750
Milepost 109, railroad track opposite	33 12 56.2	81 58 36.0	4,590
Milepost 108, railroad crossing 300 feet south of	33 12 06.7	81 58 49.7	5,135
Milepost 107, road crossing 300 feet north of	33 11 21.6	81 58 52.2	4,556
Greens Cut, railroad crossing at	33 10 27.6	81 58 49.2	5,470
Milepost 105, railroad track opposite	33 09 37.9	81 59 10.5	5,340
Milepost 97, road crossing 600 feet south of	33 03 28.0	81 59 45.2	.....
Milepost 96, railroad track opposite	33 02 45.2	81 59 25.1	4,650
Milepost 95, road crossing 660 feet south of, near house and barn	33 01 50.2	81 58 59.4	5,971
Idlewood, 30 feet east of station, on east side of railroad and south edge of wagon road; iron post stamped "Prim. Trav. Sta. No. 6, 1918 H"; 1,430 feet south of post is point on east rail, azimuth, 346° 54′ 00″	33 00 54.8	81 58 33.4	6,025

Along highways near west border of quadrangle.

Greens Cut, 1.5 miles west of, junction of roads, 150 feet southwest to cabin	33 11 06.2	81 59 54.6	.....

Magnetic declination for west border of quadrangle, 0° 32′ E.; for east border of quadrangle, 0° 45′ E.; for north border of quadrangle, 0° 22′ E.

GRISWOLDVILLE QUADRANGLE.

Along highways near east border of quadrangle. (By C. B. Kendall and C. W. Arnold in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks, center of, at road north	32 59 58.8	83 15 11.0	.....
Road forks, center of, at road west	32 59 29.1	83 15 01.8	3,102
Stream crossing	32 58 29.4	83 15 03.8	.....
Stream crossing, at second-class road	32 58 14.8	83 16 00.2	5,034
Stream crossing	32 58 07.4	83 16 18.2	1,706
Wagon bridge, center of	32 57 47.2	83 16 01.7	2,478
Road forks, center of	32 57 08.2	83 16 07.9	3,979
Do	32 56 14.0	83 15 28.3	4,454
Road forks, 60 feet southeast of, 25 feet west of mail box 76; iron post stamped "Prim. Trav. Sta. No. 2, 1916"	32 55 26.6	83 15 08.7	5,073
Road forks, northeast point of triangle at	32 54 31.4	83 15 32.2	5,925
Road forks, second-class road southeast	32 53 40.4	83 15 44.4	5,262
Wagon bridge over mill race	32 53 33.2	83 16 23.9	3,448
Center of road at north point of triangle	32 53 01.6	83 16 40.7	3,491
Road forks, road east (McIntyre road)	32 52 31.9	83 16 07.0	4,157
Catholic church, 150 feet north of, center of road fork east	32 51 50.9	83 15 19.8	5,773
Little Commissioner Creek, center of wagon bridge over	32 51 17.7	83 15 05.2	3,579
Claymont, on Central of Georgia Ry., center of track	32 51 13.7	83 15 05.3	410
Claymont, 0.8 mile southwest of, 30 feet southwest of southwest corner of Mrs. F. C. Taylor's house, 20 feet northeast of 15-inch white oak tree; iron post stamped "Prim. Trav. Sta. No. 3, 1916"	32 50 29.7	83 15 12.1	4,478
T road north	32 47 41.8	83 15 31.9	.....
Road forks, in small triangle, 78 feet northeast of 24-inch oak tree; iron post stamped "Prim. Trav. Sta. No. 15, 1916"	32 47 03.2	83 16 29.2	6,259
Road forks, in triangle, forked persimmon tree	32 46 20.2	83 17 01.0	5,114
Road forks, second-class fork south, 15 feet southwest to a three pronged oak tree	32 46 08.3	83 16 22.4	3,502
Road forks, at foot of small hill, 40 feet west to two small double oaks	32 46 18.5	83 15 36.5	4,058

Magnetic declination, east border of quadrangle, 1° 30′ E.

West along highways near north border of quadrangle.

Jones-Baldwin county line, crossing of road at culvert	32 59 51.4	83 22 46.9	.....
Road forks, in triangle at, 90 feet south at sign post; iron post stamped "Prim. Trav. Sta. No. 10, 1916"	32 59 49.8	83 23 33.7	3,982
Farm road to southeast, at top of hill, center of forks	32 59 06.7	83 24 44.0	7,411
Road forks to north, center of	32 59 34.9	83 25 28.7	4,756
Road forks, center of, 140 feet east of stream	32 59 29.2	83 28 22.5	.....
Road forks to west, center of	32 59 57.2	83 29 22.9	5,873

South along highways near west border of quadrangle.

Milepost No. 7, center of road opposite	32 54 54.2	83 29 34.6	.....
Milepost No. 9, concrete, center of road opposite	32 53 16.7	83 29 13.6	10,009
Milepost No. 10, concrete, center of road opposite	32 52 23.7	83 29 18.8	5,372
Griswoldville, public-road crossing of Central of Georgia R. R. track, 40 feet southwest of; iron post stamped "Prim. Trav. Sta. No. 12, 1916"	32 52 12.3	83 29 20.4	1,158
Dry Branch station, center of road forks, 100 feet southwest of	32 48 00.9	83 29 53.8	.....
Road forks to southeast, center of	32 47 27.9	83 29 51.9	3,334
Road forks, center of	32 45 39.2	83 29 14.1	.....

East along highways near south border of quadrangle.

Sandy Creek, center of wagon bridge over	32 46 10.3	83 20 04.1	.....
Farm road to north, center of forks	32 46 35.6	83 19 07.5	5,469
Road forks in front of schoolhouse, center of small triangle	32 47 06.4	83 18 21.2	5,027
Road forks at road to northeast, center of	32 46 51.9	83 17 14.7	5,866
Road forks, in center of small triangle at, 70 feet northeast of 24-inch oak tree; iron post stamped "Prim. Trav. Sta. No. 15, 1916" (previously described)	32 47 03.15	83 16 29.23	4,043

GRISWOLDVILLE QUADRANGLE—Continued.

Along Central of Georgia Ry. from Clymont to Griswoldville.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Station 165 (previously described)	32 51 21.96	83 15 05.62	.....
Trestle No. C 166, center of	32 51 27.6	83 15 46.8	3,562
Plantation road crossing	32 51 42.8	83 16 20.0	3,231
Trestle No. B 160, east edge of	32 52 12.8	83 17 18.2	5,820
Trestle No. A 169, center of	32 52 41.8	83 17 51.5	4,083
Public-road crossing, north-south	32 52 50.8	83 18 22.7	2,820
Do	32 52 53.2	83 19 23.4	5,190
Gordon, public-road crossing to east	32 52 54.3	83 19 54.1	2,620
Public-road crossing	32 52 57.7	83 20 59.2	5,565
Trestle A 172, center of	32 53 06.2	83 21 40.3	3,624
Trestle B 173, center of	32 53 15.2	83 22 03.9	2,205
Trestle E 173, center of	32 53 28.1	83 22 32.6	2,780
Trestle B 174, 900 feet west of east end of, 105 feet northwest of railroad track at plantation-road crossing; iron post stamped "Prim. Trav. Sta. No. 16, 1916"	32 53 46.8	83 23 21.3	4,570
Lewiston, opposite station, center of main track	32 53 47.1	83 24 14.6	4,547
Jones-Wilkinson county line	32 53 50.4	83 24 26.4	1,067
Road crossing, north-south	32 54 10.5	83 25 45.7	7,062
Public-road crossing	32 54 10.7	83 26 47.8	5,302
Do	32 53 11.0	83 27 16.1	6,496
Plantation-road crossing	32 52 16.1	83 28 01.2	6,752
Road crossing	32 52 05.8	83 28 57.6	4,922
Prim. Trav. Sta. No. 12 (previously described)	32 52 12.31	83 29 20.36	2,059

Magnetic declination for north and south borders of quadrangle, 1° 36′ E.; for west border and center of quadrangle, 1° 30′ E.

Southwest along Georgia R. R. (By E. L. McNair in 1918.)

Second-class road crossing	32 59 27.4	83 26 43.2	.....
Milepost 62	32 58 55.6	83 26 49.6	3,266
Public-road crossing	32 58 36.1	83 27 16.5	3,025
James station, public road crossing at east end of	32 57 58.4	83 28 25.4	6,990

HARDEEVILLE QUADRANGLE.

South along Seaboard Air Line Ry. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 162	32 21 55.7	81 14 54.6	.....
South end of trestle bridge over creek	32 20 49.2	81 14 43.8	6,790
Public-road crossing	32 20 28.5	81 14 40.4	2,110
Byrd's flag station, road crossing 630 feet south of	32 20 10.2	81 14 37.5	1,860
Second-class road crossing	32 19 22.1	81 14 29.7	4,915
Bridge over creek	32 18 50.2	81 14 24.5	3,255
Road crossing	32 18 17.9	81 14 19.2	3,290
Do	32 17 54.5	81 14 15.4	2,390
Rincon station, about 540 feet south of, 45 feet west of track, 290 feet south of public-road crossing, azimuth to Baptist church spire is 243° 44′ 00″; iron post stamped "Prim. Trav. Sta. No. 83, 1917 Mac."	32 17 33.3	81 14 12.4	2,158
Road crossing	32 16 43.7	81 14 03.9	5,063
Second-class road crossing	32 16 23.2	81 14 00.6	2,090
Public-road crossing	32 15 22.2	81 13 50.7	6,225

Magnetic declination, 0.3′ E. (only one observation).

HAYLOW QUADRANGLE.

Along Atlantic Coast Line R. R. southwest across quadrangle near northwest corner. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 129	30 59 51.6	82 50 47.6	.....
Dupont siding, switch stand, 880 feet northeast of milepost 130	30 59 33.9	82 51 33.5	4,375
Dupont, 260 feet southwest of station, 80 feet southeast of main track, 5 feet from fence line; iron post stamped "Prim. Trav. Sta. No. 42, 1917 Mac."; azimuth of long tangent, 65° 55′	30 59 13.1	82 52 25.5	4,993
Public-road crossing near turnout of line south to Florida	30 59 01.4	82 52 58.1	3,072
Public-road crossing, 550 feet northeast of milepost 132	30 58 49.9	82 53 28.1	2,855
Private-road crossing	30 58 36.0	82 54 04.2	3,450
Milepost 133	30 58 26.3	82 54 29.2	2,380
Private-road crossing, 1,360 feet southwest of milepost 134	30 57 59.0	82 55 40.0	6,755
Private-road crossing, 140 feet northeast of milepost 135	30 57 43.8	82 56 19.4	3,750
Road crossing, 970 feet northeast of milepost 136	30 57 26.2	82 57 05.2	4,370
Road crossing	30 56 49.5	82 58 40.0	9,045
Private-road crossing	30 56 32.8	82 59 23.1	4,120
Stockton, 250 feet northeast of station, 30 feet northwest of center of main track, 10 feet northeast of road and in line with road northwest; iron post stamped "Prim. Trav. Sta. No. 43, Mac. 1917"; azimuth of long tangent, 65° 45′	30 56 19.8	82 59 57.6	3,273

HEARTSEASE QUADRANGLE.

Along Georgia Southern & Florida Ry. northwest across quadrangle near southwest corner. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Lenox, about 320 feet north of point opposite station, 25 feet east of center of track, 120 feet south of milepost 118; iron post stamped "Prim. Trav. Sta. No. 48, Mac. 1917"	31 16 22.2	83 27 52.3	.....
Public-road crossing	31 16 53.0	83 28 00.4	3,195
Road crossing	31 17 41.5	83 28 12.8	5,015
Road crossing, just north of switch stand at spur	31 19 01.3	83 28 33.2	8,250
Berrien-Tift county-line post	31 19 35.2	83 28 41.8	3,510
Intersection of tangents	31 20 36.6	83 28 57.5	6,355
Public-road crossing	31 21 04.4	83 29 03.4	2,850
Eldorado station (Fender post office), road crossing	31 21 32.2	83 29 09.4	2,859
Eldorado station (Fender post office), 380 feet north of road crossing at station, 25 feet west of center of track; iron post stamped "Prim. Trav. Sta. No. 49, Mac. 1917"; azimuth to church spire, 283° 32′; azimuth of railroad tangent, 169° 41′	31 21 35.9	83 29 10.4	3,772
Road crossing	31 22 16.7	83 29 22.3	4,255
Farm-road crossing	31 23 35.4	83 29 37.6	8,055
Public-road crossing	31 24 01.9	83 29 42.8	2,720
Intersection of long tangents	31 25 05.6	83 29 55.3	6,520

Deflection, minus 8° 22′.

HEPHZIBAH QUADRANGLE. For other positions in Hephzibah quadrangle see Camp Hancock.

Along Georgia & Florida Ry. from Augusta to Keysville. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 3, road crossing 2,100 feet south of, 20 feet east to crossing sign	33 25 42.4	82 00 08.0	.....
Neco, road crossing at station	33 25 00.4	82 00 27.9	4,571
Adam, road crossing at station	33 24 34.8	82 00 40.1	2,780
Road crossing 20 feet east to large stone post	33 23 55.1	82 00 58.9	4,319
Adventure, road crossing at station	33 23 24.9	82 01 09.0	3,175
Road crossing, 20 feet southwest to crossing sign	33 22 10.8	82 01 15.1	7,511
Gracewood, railroad track opposite	33 22 01.6	82 01 19.9	1,010
Road crossing, 200 feet south to Goodrich signboard	33 21 15.8	82 02 50.9	9,003
Bruce, road crossing at station	33 21 05.7	82 03 12.2	2,081
Milepost 11, railroad track opposite	33 20 49.8	82 03 59.4	4,310
Milton, road crossing at station	33 20 26.5	82 04 41.1	4,257
Hephzibah, road crossing under railroad, 3,000 feet north of	33 19 22.1	82 05 23.0	7,461

HEPHZIBAH QUADRANGLE—Continued.

Along Georgia and Florida Ry. from Augusta to Keysville. (By G. T. Hawkins in 1918.)—Con.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Hephzibah, on west side of railroad, opposite north end of railroad station; iron post stamped "Prim. Trav. Sta. No. 1, 1918 H"; 1,800 feet southwest of post is point on northwest rail, azimuth 76° 35′ 15″	33 18 57.2	82 05 52.6	3,500
Road crossing, 600 feet north of house	33 18 40.2	82 06 53.8	5,475
Milepost 16, forks in county road 400 feet from	33 18 21.4	82 07 13.2	2,518
Road crossing, 20 feet southwest to crossing sign	33 18 19.0	82 08 13.1	5,089
Erie, road crossing at station	33 18 11.0	82 09 04.3	4,424
Milepost 19, railroad track opposite	33 17 49.3	82 10 08.7	5,889
Milepost 20, railroad track opposite	33 17 42.5	82 11 06.8	4,979
Blythe, road crossing south of station	33 17 32.2	82 12 06.2	.....
Milepost 22, railroad track opposite	33 16 51.6	82 12 30.3	4,584
Milepost 23, railroad track opposite	33 16 21.9	82 13 13.6	4,743
Milepost 24, road crossing at	33 15 31.0	82 13 14.0	5,143
Along Georgia R. R. near north border of quadrangle.			
Augusta yards, road crossing under railroad	33 27 32.3	82 00 31.7	.....
Road crossing, 200 feet south to Partridge Inn sign	33 27 18.2	82 01 16.2	4,025
Wheeless, road crossing at station	33 27 14.9	82 02 44.4	7,475
Milepost 6, railroad track opposite	33 27 47.5	82 03 37.7	5,598
Milepost 7, railroad track opposite	33 27 21.7	82 04 34.8	5,500
About halfway between mileposts 7 and 8, on north side of railroad and 40 feet toward Augusta from road crossing, 200 feet north of new frame house; iron post stamped "Prim. Trav. Sta. No. 13, 1918 H"; 1,450 feet southwest is point on north rail, azimuth 56° 42′ 00″; 541 feet northeast is point on north rail, azimuth 239° 19′ 40″	33 27 04.96	82 05 07.13	3,220
Road crossing, 200 feet north to house	33 26 39.6	82 05 47.7	4,328
Belair, road crossing at station	33 26 30.4	82 07 16.4	7,556
Milepost 11, road crossing 200 feet west of	33 27 00.8	82 08 12.4	5,644
Log siding, road crossing 200 feet west of switch stand	33 27 12.6	81 09 07.2	4,790
Corporate limits sign, opposite railroad track	33 27 04.3	82 10 21.4	6,348
Grovetown, 5 miles northeast of, road crossing	33 27 25.4	82 11 38.8	6,900
Grovetown, road crossing at station	33 27 01.2	82 11 55.7	2,768
Along highways near north border of quadrangle.			
Grovetown, 1 mile northwest of, T road north, 30 feet northeast to mail box	33 27 21.9	82 12 38.7	4,152
Grovetown, 2 miles northwest of, north end of iron bridge	33 28 01.1	82 13 58.1	7,793
Church, road south of	33 28 19.5	82 14 54.1	5,090
Berzelia, 1 mile southeast of, crossroads	33 23 32.9	82 14 42.6	.....
Berzelia, about 2.5 miles southeast of, at public crossroads, 80 feet southwest of C. B. Purvis's house, 20 feet northwest of crossroads; iron post stamped "Prim. Trav. Sta. No. 15, 1918 H"; 600 feet south to nail in hub on west side of road, azimuth, 351° 32′ 15″; 376 feet north to nail in hub on west side of road, azimuth, 167° 51′ 00″	33 22 44.8	82 13 45.6	6,870
Along highways near west border of quadrangle.			
Second-class fork to northwest, 400 feet northeast to cluster of houses and large bell	33 21 32.9	82 13 02.7	8,128
Hoods Chapel, three corners 1,000 feet south of, 60 feet northeast to cabin opposite	33 20 18.7	82 12 59.1	7,505
House on west side of road opposite to drive	33 19 22.6	82 12 09.5	7,065
Blythe crossroads, 1.5 miles northeast of	33 18 30.9	82 11 53.3	5,410
Along highways. (By O. B. Walsh in 1918.)			
Center of wooden bridge	33 18 01.83	82 14 54.71	.....
T road north	33 18 09.51	82 13 59.04	4,786
Crossroads at Patterson road, 1 mile north of Blythe	33 18 15.27	82 13 07.96	4,372
Cement sign post at road crossing, 0.25 mile north of Blythe	33 17 53.20	82 12 19.48	4,679
Railroad crossing south of Blythe railroad station (described previously)	33 17 32.20	82 12 06.20	2,403
NOTE.—The above line is from Primary Traverse Station No. 22, 1918 H in northwest corner of Spread quadrangle, along the southern border of Dearing quadrangle, to railroad crossing at Blythe railroad station in southwest corner of Hephzibah quadrangle. Latitude error, 0.24″; longitude error, 0.62″.			

Magnetic declination for south border of quadrangle, 0° 48′ E.; for north and west borders of quadrangle, 0° 49′ E.

HILLTONIA QUADRANGLE.

Along highway in north part of quadrangle. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads	32 58 22.9	81 33 31.2	.....
Road fork	32 57 29.3	81 34 21.8	6,922
Crossroads	32 57 09.9	81 35 30.4	6,168
Mears post office, crossroads at	32 56 55.3	81 35 54.7	2,540
Bridge over creek	32 56 47.3	81 36 18.6	2,191
Road fork	32 56 16.0	81 37 24.1	6,417
Road fork, 120 feet east of water tank, Millhaven	32 55 59.6	81 38 58.9	8,247
Spur line unchecked.			
Burton's Landing, U. S. Engineers bench mark (concrete monument); azimuth to nail in pine tree 5 feet above ground, 190 feet distant, 350° 40′ 30″	32 56 19.7	81 30 13.1	.....
Road fork	32 55 30.1	81 31 22.0	3,804
T road east to Barton's Ferry landing	32 56 15.5	81 31 39.6	4,831
T road west	32 56 25.2	81 31 45.3	1,096
Do	32 57 03.7	81 32 14.7	4,620
Rocky Creek, center of bridge over	32 57 37.8	81 32 30.6	3,706
Road fork at E. C. Kain's store	32 58 20.4	81 32 52.9	4,711
Crossroads	32 59 18.3	81 33 31.7	6,720
Milepost 2, center of road opposite	32 59 52.0	81 33 50.8	3,778
East along highways near south border of quadrangle.			
Road fork	32 45 06.0	81 37 31.9	4,767
Angle in road	32 45 00.7	81 35 13.8	.....
T road north at mail box	32 45 01.3	81 34 42.6	2,673
Buck Creek Church, 160 feet N. 40° E. from, 350 feet north of T road corners; iron post stamped "Prim. Trav. Sta. No. 112, 1918 Mac."; azimuth to Bowie monument, 52° 12′ 15″	32 45 11.9	81 31 25.6	2,691
Road fork	32 45 42.3	81 31 28.7	3,080
Crossroads	32 46 38.9	81 31 19.7	5,777
Road fork	32 47 09.8	81 30 50.8	3,980
Do	32 47 44.2	81 30 26.0	4,076
T road west	32 51 33.2	81 30 00.9	.....
Crossroads	32 52 19.6	81 30 21.6	5,012
Road fork	32 52 55.9	81 30 44.9	4,172
Road fork 300 feet south of mail box	32 53 41.1	81 30 59.2	4,730
Crossroads, 75 feet north of, 15 feet east of center of road, 15 feet north of J. S. Herrington's mail box; iron post stamped "Prim. Trav. Sta. No. 115, 1918 Mac."	32 54 53.4	81 31 12.0	7,393
Along Savannah & Atlanta Ry.			
Road crossing	32 58 06.1	81 44 26.7	.....
Do	32 57 52.4	81 43 52.0	3,270
Do	32 57 33.0	81 43 03.0	4,616
Do	32 57 12.9	81 42 12.0	4,786
Do	32 56 37.3	81 40 42.4	8,456
Do	32 56 14.4	81 39 44.5	5,450
Millhaven station, about 2,000 feet southwest of, 520 feet S. 20° E. from public-road crossing of railroad, on prolongation of spur track leading from Millhaven station to main line, 50 feet southwest of spur track and 100 feet from main line; iron post stamped "Prim. Trav. Sta. No. 107, 1918 Mac."	32 55 50.0	81 39 14.4	3,561
Creek crossing	32 55 08.6	81 39 22.3	4,242
Road crossing	32 54 36.4	81 39 27.8	3,290
Milepost 69, center of track opposite	32 53 51.1	81 39 35.6	4,628
Road crossing	32 53 19.6	81 39 39.8	3,203
Do	32 53 02.6	81 39 42.7	1,741
Do	32 52 22.2	81 39 49.7	4,130
Creek crossing	32 52 02.0	81 39 53.3	2,062

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HILLTONIA QUADRANGLE—Continued

Along highways near west border of quadrangle. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads	32 56 50.0	81 44 19.1	
Do	32 56 20.1	81 43 44.9	4,200
Burke and Screven county-line crossing	32 56 09.2	81 43 22.2	2,225
Road fork	32 55 48.7	81 42 34.3	4,576
Lovett cemetery, crossroad at	32 55 27.1	81 42 11.6	2,910
Road fork	32 55 17.2	81 42 27.8	1,706
Do	32 54 46.4	81 43 04.9	4,448
Do	32 54 08.7	81 43 48.6	5,333
Roberts Bridge, 0.25 mile south of, 15 feet south of fence corner, 12 feet west of road, 3 feet east of fence; iron post stamped "Prim. Trav. Sta. No. 117, 1918 Mac."; azimuth to nail in pine tree 700 feet distant, 24° 03′ 15″	32 53 38.9	81 44 23.3	4,227
Crossroads	32 52 40.3	81 44 24.8	5,930
Road fork	32 52 18.7	81 43 47.9	3,833
Do	32 52 15.9	81 43 22.8	2,148
Crossroad at church	32 51 52.7	81 42 16.9	6,084
Road fork	32 51 24.4	81 42 30.5	3,095
Crossroads at summit of hill	32 50 59.3	81 43 12.0	4,360
Crossroads	32 50 21.2	81 44 04.2	5,894

Along Sylvania Central Ry. near south border of quadrangle.

Zeigler station, 430 feet north of, 60 feet north of railroad track, 40 feet southeast of road crossing; iron post stamped "Prim. Trav. Sta. No. 118, Mac. Elev. 279"; azimuth to rear end of brick store about 500 feet distant, 267° 52′ 00″	32 45 04.4	81 43 49.1	
Intersection of tangent	32 45 02.0	81 43 02.4	4,000
Road crossing	32 45 23.0	81 41 57.6	5,920
Do	32 45 33.4	81 41 16.8	3,642
Do	32 45 30.8	81 40 49.0	2,388
Do	32 45 19.6	81 39 56.1	4,661

Along highway near west border of quadrangle.

Road fork	32 49 34.5	81 44 53.9	
House of Mrs. Clara Waters, nail in root of live-oak tree 80 feet west of	32 49 19.2	81 44 19.4	3,324
Crossroads	32 46 37.7	81 44 33.2	
Do	32 46 29.4	81 44 04.1	2,578
Road fork	32 45 22.2	81 43 37.0	7,188
Bascom station, 140 feet south of road crossing at, 20 feet west of center of track; iron post stamped "Prim. Trav. Sta No. 108, 1918 Mac."	32 50 22.8	81 40 10.5	
Road crossing	32 49 46.9	81 40 16.4	3,640
Do	32 49 22.5	81 40 23.2	2,540
Do	32 48 08.0	81 40 55.8	8,026
Do	32 47 41.7	81 40 52.5	2,678
Do	32 47 06.9	81 40 28.7	4,064
Do	32 46 32.8	81 40 19.5	3,535
Do	32 45 48.4	81 39 31.5	6,076
Railroad crossing	32 45 17.9	81 38 46.5	4,830

Magnetic declination for west border and east border of quadrangle, 0° 30′ E.

HINESVILLE QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing, 75 feet northeast of mile post "Savannah 41"	31 45 04.4	81 40 07.7	
Road crossing	31 45 44.1	81 38 53.6	7,550
Walthonsville station, 210 feet northeast of, 60 feet southeast of center of main track, in open ground; iron post stamped "Prim. Trav. Sta. No. 17, 1917 Mac"	31 46 10.3	81 38 03.2	5,093
Road crossing	31 46 29.9	81 37 27.9	3,630
Allenhurst station, road crossing at	31 47 01.7	81 36 28.3	6,065
Palmer siding, road crossing at	31 47 49.7	81 34 58.5	9,140

HINESVILLE QUADRANGLE—Continued.

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing, 85 feet southwest of mile post "Savannah 34"	31 48 18.8	81 34 04.0	5,550
Road crossing	31 48 54.1	81 32 57.8	6,730
McIntosh station, opposite center and about 70 feet north of, 60 feet west of road crossing, 40 feet south of Martin Brother's store, in line of row of shade trees; iron post stamped "Prim. Trav. Sta. No. 18, 1917 Mac"	31 49 32.27	81 31 47.28	7,205
Road crossing, 400 feet west of milepost S_{29}	31 49 38.7	81 31 34.2	1,304

Magnetic declination for line, 0° 24′ E.

Along highways near west border of quadrangle. (By E. L. McNair in 1917.)

Angle in road (32°)	31 45 19.0	81 42 42.4	.....
Angle in road	31 45 32.3	81 42 14.2	2,780
T road northwest	31 46 06.9	81 41 41.8	4,477
Angle in road	31 46 39.3	81 41 20.5	3,756
Elam Church, 400 feet S. 72° W. from northwest corner of, in line with road northeast to Hinesville, 25 feet west of road; iron post stamped "Prim. Trav. Sta. No. 28, 1917 Mac."; azimuth to T. J. Tidwell monument in cemetery, 460 feet distant, 284° 03′	31 47 20.8	81 41 02.4	4,475
Road west	31 47 34.3	81 41 18.2	1,924
Crossroads (Hinesville-Roderick)	31 48 26.6	81 41 43.4	5,718
Gum Branch post office, 300 feet north of, T road northeast	31 49 14.7	81 41 59.0	5,039
Road forks	31 49 35.0	81 42 19.7	2,726
Crossroads	31 50 17.2	81 43 15.9	6,451
Road forks	31 50 47.3	81 43 53.2	4,427
Do	31 51 38.4	81 44 56.4	7,505
Angle in road	31 55 34.9	81 44 59.0	.....
Road forks	31 56 05.2	81 44 45.1	3,291
Frank Mulling's house, T road corners in front of	31 56 43.0	81 44 47.8	3,821
Mill pond outlet, center of bridge over	31 58 09.3	81 44 49.5	8,723
Second-class road crossing	31 59 13.7	81 44 22.5	6,915
Road forks	31 59 31.3	81 43 39.4	4,116
Do	31 59 37.5	81 43 08.3	2,748
Bacon's store, 0.30 mile from, crossroads	31 59 50.1	91 42 46.5	2,265
Angle in road 12 feet south to center of road, 10 feet east to small bridge	31 59 58.1	81 42 17.8	2,606
Road forks	31 59 49.7	81 40 48.9	7,699

Along highways through center of quadrangle.

T road north to Butler's bridge	31 59 16.5	81 36 33.0	.....
Angle in road	31 58 39.9	81 36 52.0	4,042
Angle in road, in line with straight road in both directions	31 57 55.9	81 37 53.8	6,940
Road forks	31 57 26.6	81 38 51.1	5,754
Road west	31 56 45.3	81 38 46.3	4,194
Taylors Creek post office, 0.25 mile north of, 250 feet south of bridge over main branch of Little Canoochee Creek, 100 feet south of forks of road, on point of land between roads; iron post stamped "Prim. Trav. Sta. No. 32, 1917 Mac."	31 56 20.0	81 38 40.0	2,613
Road forks	31 56 05.5	81 38 26.4	1,876
Road forks at signboard marked "To Savannah"	31 56 05.3	81 37 50.4	3,100
Farm road crossing near corner of field	31 55 47.6	81 37 22.0	3,032
Angle in road	31 55 21.5	81 36 45.3	4,126
Do	31 54 55.8	81 36 12.5	3,837
Road crossing old abandoned tramway	31 54 16.3	81 35 48.4	4,499
Second-class crossroad	31 53 48.1	81 35 31.7	3,192
Road forks	31 53 04.7	81 35 06.1	4,911
Angle in road	31 52 02.9	81 35 23.7	6,424
Hinesville, in west side of courthouse yard, 4 feet north of gate, 3 feet east of fence; iron post stamped "Prim. Trav. Sta. No. 31, 1917 Mac."; azimuth to northeast corner of Hinesville brick bank building distant 166 feet, 350° 33′	31 50 51.5	81 35 45.8	7,466
Second-class crossroad	31 51 21.1	81 34 20.4	7,950
Flemington post office, T road southwest, 15 feet north and 20 feet west to T road northeast	31 51 34.5	81 33 48.8	3,041
Forks of road, second-class road north	31 51 18.1	81 33 29.7	2,337
Abandoned tramroad crossing	31 50 53.7	81 33 01.3	3,474
Second-class road west	31 50 19.6	81 32 21.7	4,854
Road forks	31 49 48.7	81 31 45.9	4,390
Prim. Trav. Sta. No. 18 (?) at McIntosh NOTE.—In original field book this station was not numbered. Station No. 18 is at Flemington station.	31 49 32.27	81 31 47.28	1,663

HINESVILLE QUADRANGLE—Continued.

Along highways near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks, road westerly	31 52 15.1	81 32 49.1	.....
Road forks, second-class road east	31 52 50.8	81 31 56.1	5,821
Angle in road, in line both ways	31 53 06.4	81 31 33.3	2,526
Crossing of old, abandoned tramroad	31 53 42.3	81 31 22.3	3,752
Do	31 54 12.4	81 31 12.8	3,143
Flemington post office, 5 miles northeast of, 400 feet north of a second-class crossroad on knoll, 20 feet east of center of road, 4 feet west of corner of rail fence; iron post stamped "Prim. Trav. Sta. No. 33, 1917 Mac."; azimuth to north edge of brick chimney on white house with blinds, about 600 feet distant, 53° 26′	31 54 54.3	81 31 06.1	4,281
T road corners, east, west, and south	31 56 14.0	81 31 35.5	8,435
Road forks, private (?) road northerly	31 56 34.7	81 30 53.2	4,207
Angle in road	31 57 09.3	81 30 15.2	4,780
Tramroad crossing	31 58 54.8	81 30 20.7	.....
T road northwest	31 58 33.4	81 30 57.5	3,831
Angle in road	31 58 21.2	81 31 33.4	3,338
Small bridge over drainage ditch, at corner of field on north	31 58 12.9	81 32 39.8	5,776
Center of road between turpentine still and sawmill	31 58 13.5	81 33 16.0	3,125
T road south, 90 feet east of small water-oak tree, halfway between road and yard fence	31 58 40.8	81 34 23.5	6,436
T road northwest at fence corner	31 59 06.6	81 35 07.0	4,561
Crossroads	31 59 42.1	81 35 40.6	4,614
Butler Bridge over Canoochee River, S. 60° W. and 270 feet distant from south end of, in line with road over bridge, 20 feet south of wagon road; iron post stamped "Prim. Trav. Sta. No. 35, 1917 Mac."; azimuth to tenpenny nail driven in pine tree 5 feet above ground 220 feet distant, 225° 41′ 30″	31 59 32.0	81 36 00.8	2,022
T road north	31 59 16.49	81 36 32.95	3,178

Magnetic declination for west border of quadrangle, 0° 44′ E.; for north border of quadrangle, 0° 30′ E.; for east border of quadrangle, 0° 28′ E.

Near north border of quadrangle. (By Oscar Jones in 1918.)

Crossroads	31 59 42.1	81 35 40.5	.....
Butler Bridge, "Prim. Trav. Sta. No. 35, 1917 Mac."	31 59 32.0	81 36 00.8	2,028

HOMERVILLE QUADRANGLE.

Along Atlantic Coast Line R. R. southwest across quadrangle near southeast corner. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing, 665 feet southwest of milepost 124	31 02 35.2	82 46 17.5	.....
Switch stand at spur track	31 01 27.6	82 46 37.5	1,901
Road crossing	31 01 05.3	82 47 35.6	5,525
Cutting, 400 feet southwest of station, road crossing	31 00 45.0	82 48 28.4	5,035
Private-road crossing, 265 feet southwest of milepost 128	31 00 11.8	82 49 55.0	8,250

HORTENSE QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing, center of track at	31 15 05.9	81 58 28.7	.....
Raybon tower, west of, 3 feet east of fence line, 1,575 feet south of road crossing at freight platform, 1,250 feet north of switch stand at south end of siding, 73 feet west of center of track; iron post stamped "Prim. Trav. Sta. No. 9, 1917 Mac."; azimuth to switchstand at north end of siding, distant 1,300 feet, 194° 16′ 30″	31 15 30.6	81 58 24.2	2,523
Road crossing, center of track	31 15 45.8	81 58 20.0	1,572
Milepost "Savannah 81," center of track opposite	31 16 10.7	81 58 14.5	2,565
South end of trestle, center of track	31 16 50.8	81 58 05.8	4,125
Satilla River, center of steel truss bridge over	31 17 49.6	81 57 52.9	6,044
Little Satilla River, center of steel girder bridge over	31 18 42.7	81 57 41.8	5,443
Hortense, 1.25 miles south of, intersection of long tangents	31 19 06.0	81 57 36.7	2,400
Hortense, 80 feet southeast from intersection of railroads, 74 feet east of Atlantic Coast Line R. R. and 48 feet south of Atlanta, Birmingham & Atlantic R. R.; iron post stamped "Prim. Trav. Sta. No. 10, 1917 Mac."; azimuth to semaphore post 2,000 feet south, 14° 07′ 30″	31 20 11.9	81 57 18.9	6,827
Milepost "Savannah 76," center of track opposite	31 20 26.9	81 57 15.9	1,540
Second-class road crossing, center of track	31 21 03.8	81 57 06.4	3,820
Milepost "Savannah 74," center of track opposite	31 22 09.0	81 56 49.8	6,740
Road crossing, center of track	31 22 37.2	81 56 42.5	2,915
Switch stand at south end of siding	31 23 23.6	81 56 30.6	4,805
McKinnon flag station, road crossing	31 24 10.8	81 56 18.6	4,875
Milepost "Savannah 71," track opposite	31 24 42.2	81 56 10.5	3,245
Road crossing, center of track	31 25 34.4	81 55 57.2	5,400
Milepost "Savannah 69," track opposite	31 26 24.2	81 55 44.4	5,155
Road crossing, center of tract	31 27 40.8	81 55 24.7	7,925
Broadhurst, N. 60° W. 75 feet distant from road crossing, 25 feet north of roadway, 2.5 feet east of wire fence; iron post stamped "Prim. Trav. Sta. No. 11, 1917 Mac."	31 28 27.9	81 55 13.5	4,857
Road crossing, center of track	31 28 59.4	81 55 04.5	3,276

Magnetic declination for line, 0° 52′ E.

Along Atlanta, Birmingham & Atlantic R.R. in south part of quadrangle. (By Oscar Jones in 1917.)

Road crossing	31 19 18.1	81 45 00.8	.....
East abutment of trestle	31 19 43.0	81 45 56.8	5,467
Browntown, 0.5 mile east of; road crossing (tie line from Grangeville)	31 20 12.4	81 46 33.8	4,370
Browntown, road crossing	31 20 24.3	81 47 01.2	2,670
Road crossing	31 20 50.6	81 48 02.4	5,930
Do	31 20 48.0	81 48 41.7	3,420
Do	31 20 37.4	81 49 32.6	4,540
Fendig, road crossing	31 20 26.3	81 50 26.2	4,790
Road crossing	31 20 15.8	81 51 51.6	7,477
Do	31 20 06.1	81 53 16.8	7,460
Needmore, road crossing	31 20 00.8	81 54 03.1	4,050
Road crossing	31 19 55.6	81 54 48.5	3,970
Do	31 19 58.7	81 56 06.5	6,778
Do	31 20 04.2	81 56 35.6	2,580
Hortense, crossing of Atlantic Coast Line and Atlanta, Birmingham & Atlantic railroads	31 20 12.5	81 57 19.6	3,910
Road crossing	31 20 26.5	81 58 34.3	6,634
Do	31 20 32.2	81 59 04.4	2,670
Do	31 20 36.8	81 59 29.0	2,190
Do	31 20 42.4	81 59 58.7	2,640

Along highways in east part of quadrangle.

Crossroads	31 26 00.9	81 45 03.0	.....
Do	31 25 27.8	81 45 06.8	3,360
Do	31 24 42.3	81 45 23.6	4,822
Point in road opposite milepost 18	31 24 01.6	81 45 36.1	4,254
Bed of old tramway	31 23 46.1	81 45 40.4	1,600
Point in road opposite milepost 19	31 23 06.1	81 45 51.3	4,151
Road forks	31 22 49.1	81 45 55.7	1,759
Do	31 22 13.9	81 45 57.6	3,560
Road forks at church	31 21 24.7	81 45 58.3	4,960
Road forks	31 20 56.1	81 46 10.4	3,076
Browntown, 0.5 mile east of, center of track on Atlanta, Birmingham & Atlantic R. R.	31 20 12.4	81 46 33.8	4,864

JEFFERSONVILLE QUADRANGLE.

East along highways near north border of quadrangle. (By C. B. Kendall and C. W. Arnold in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks, center of	32 44 51.5	83 28 52.6	
Road forks to southwest, center of	32 44 21.4	83 29 07.6	3,306
Road forks, in center of triangle at; iron post stamped "Prim. Trav. Sta. No. 13, 1916"	32 43 50.8	83 29 08.8	3,092
Glenland schoolhouse, southwest corner of	32 43 22.9	83 28 45.1	3,468
Road forks, center of	32 43 06.1	83 28 09.8	3,456
Do	32 43 12.8	83 26 49.0	6,942
Ripley station, center of road crossing on Macon, Dublin & Savannah R. R.	32 43 29.1	83 24 59.9	9,466
Road crossing, center of track on Macon, Dublin & Savannah R. R.	32 43 06.0	83 24 23.7	3,865
Road crossing, Macon, Dublin & Savannah R. R	32 43 01.6	83 23 41.4	3,645
Farm road to north, center of forks	32 43 32.4	83 23 14.1	3,887
Lane to south, center of road forks at	32 44 19.1	83 22 57.5	4,938
Road forks to northeast, center of	32 44 40.4	83 22 32.8	3,010
Road forks at R. F. D. mail box No. 7, center of	32 44 52.9	83 21 28.4	5,652
Forks of Jeffersonville-Gordon and Jeffersonville-Irwinton roads, in center of small triangle at; iron post stamped "Prim. Trav. Sta. No. 14, 1916"	32 44 24.2	83 20 55.0	4,063

Magnetic declination for north border of quadrangle, 1° 30′ E.

JESUP QUADRANGLE.

By U. S. Coast and Geodetic Survey in 1917.

Station.	Latitude.	Longitude.	Distance between stations.
Jesup, on east railing of iron bridge carrying track of Southern Ry. main line over tracks of Atlantic Coast Line R. R., about 3 feet east of right rail of Southern track, directly over south rail of Atlantic Coast Line track, marked by a cross cut deep into the top of the iron railing. NOTE—This point was located at the request of Mr. Jones, of the Geological Survey, in charge of traverse work in that region.	° ′ ″ 31 36 29.60	° ′ ″ 81 52 43.89	*Feet.*

Along highways near west border of quadrangle. (By E. L. McNair in 1917.)

Crossroads	31 44 56.1	81 57 59.4	
Crossroads, center line of	31 44 13.8	81 57 54.2	4,301
Road forks near small brook	31 43 26.2	81 57 32.6	5,157
Road forks close to running stream	31 42 58.6	81 57 39.9	2,855
T road southwest	31 42 16.7	81 57 24.2	4,449
T road southwest to Odum	31 41 50.8	81 57 05.1	3,085
Consolidated school, T road southwest at	31 41 24.8	81 56 42.2	3,294
Right angle in road	31 40 46.0	81 56 49.9	3,972
Road forks 100 feet west of small stream	31 40 11.3	81 57 08.8	3,867
Ford across creek, just below mill pond	31 39 52.6	81 56 57.4	2,138
Crossroads	31 38 56.3	81 57 09.1	5,772
Nesbitt, Prim. Trav. Sta. No. 14, 1917. (See p. 107 for description.)	31 38 23.6	81 57 20.0	3,438

At Jesup.

Prim. Trav. Sta. No. 13, 1917 (previously described)	31 36 25.0	81 52 48.0	
U. S. Coast and Geodetic Survey traverse station L 19 (?), 200 feet south of overhead bridge of Southern Ry. at Jesup, 20 feet west of Southern Ry. track; concrete monument with tablet in top, marked "Jesup 1917" and bearing legend	31 36 28.01	81 52 42.54	562

Along Georgia Coast & Piedmont R. R. in northeast part of quadrangle.

Public-road crossing	31 43 40.6	81 45 42.6	
Second-class road crossing, 780 feet southeast of old road crossing at switch stand	31 44 12.1	81 46 15.8	4,285
Public-road crossing	31 44 36.6	81 46 41.6	3,330

Magnetic declination for west border of quadrangle, 0° 47′ E.

JESUP QUADRANGLE—Continued.

Along Southern Ry. from Pendarvis to Jesup. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	31 30 12.6	81 45 29.9	
Pendarvis signboard, center of track opposite (by computation from "PEN" U. S. C. & G. S. station)	31 30 26.5	81 45 46.0	1,990
Road crossing	31 30 59.4	81 46 24.2	4,660
Sawmill, road crossing	31 31 31.0	81 47 00.2	4,480
Gardi, road crossing	31 32 16.4	81 47 52.4	6,440
Road crossing	31 33 09.6	81 48 53.6	7,540
Odessa, road crossing	31 33 26.6	81 49 13.1	2,410
Trestle, east abutment of	31 33 58.0	81 49 49.2	4,460
Road crossing	31 34 56.6	81 50 56.6	8,310
Do	31 35 43.3	81 51 50.2	6,620
Main line junction	31 36 21.4	81 52 34.2	5,410
Jesup, iron post (previously described)	31 36 18.7	81 52 57.0	1,951

From Jesup southwest along Atlantic Coast Line R. R.

Jesup, 0.9 mile southwest of, road crossing at section house	31 35 44.5	81 53 34.7	
Road crossing	31 34 53.9	81 54 31.6	7,100
Do	31 34 37.1	81 54 50.7	2,380
Center of trestle	31 33 59.1	81 55 33.4	5,320
Road crossing	31 33 12.6	81 56 25.6	6,520
Road crossing at sawmill	31 32 07.8	81 57 38.3	9,090
Road crossing	31 31 19.8	81 58 32.3	6,740
Do	31 30 39.0	81 59 17.9	5,700
Do	31 30 11.6	81 59 48.7	3,860

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Road crossing, center of track	31 30 47.0	81 54 36.9	11,134
Do	31 32 27.0	81 54 11.2	10,346
Do	31 33 53.5	81 53 49.0	8,950
Do	31 34 56.8	81 53 32.7	6,550
Do	31 35 47.7	81 53 19.6	5,269
Jesup station, 150 feet southwest of, 33 feet northwest of nearest track, 14 feet southeast of line of posts on station grounds; iron post stamped "Prim. Trav. Sta. No. 12, 1917 Mac."	31 36 18.7	81 52 57.0	3,704
Jesup station, 700 feet southeast of, 230 feet south of city water tower, 70 feet southeast from center of main track of Atlantic Coast Line R. R., 6 feet northwest of telephone pole; iron post stamped "Prim. Trav. Sta. No. 13, 1917 Mac."	31 36 25.0	91 52 48.0	1,002
Milepost "Savannah 56," near center of short trestle opposite	31 37 04.8	81 52 04.3	5,514
Switch stand at turnout	31 37 51.8	81 51 11.3	6,595
Road crossing	31 38 02.6	81 50 59.1	1,510
Doctortown siding, switchstand at southwest end of	31 38 43.1	81 50 13.4	5,680
Doctortown siding, road crossing at	31 38 49.4	81 50 06.6	870
Doctortown, 122 feet south by 58 feet west of, 43 feet northwest of center of track, in line of planted shade trees; iron post stamped "Prim. Trav. Sta. No. 15, 1917 Mac."	31 39 10.9	81 49 46.4	2,779
Altamaha River, center of draw span over	31 39 15.5	81 49 41.2	649
Long trestle, south end of	31 40 03.0	81 48 55.1	6,225
Milepost "Savannah 50" opposite	31 40 53.9	81 47 55.0	7,311
Road crossing, second class	31 41 44.7	81 46 20.4	9,650
Milepost "Savannah 47" opposite	31 42 17.3	81 45 19.5	6,200

West along Southern Ry. from Jesup to Nesbitt. (Unchecked spur line.)

Primary Traverse Station No. 13 (previously described)	31 36 25.0	81 52 48.0	
Road crossing	31 36 47.7	81 53 04.9	2,723
Do	31 37 11.7	81 53 48.0	4,450
Road crossing, 630 feet west of milepost 385	31 37 43.4	81 55.20.5	8,610
Road crossing	31 37 54.8	81 55 53.5	3,080
Do	31 38 08.4	81 56 33 5	3,720
Nesbitt flag station, 300 feet west of road crossing at, 75 feet south of center of main track, just north of public road; iron post stamped "Prim. Trav. Sta. No. 14, 1917 Mac"	31 38 23.6	81 57 20.0	4,306

Magnetic declination for line, 0° 10′ W.

KINGSLAND QUADRANGLE.

Along Atlantic Coast Line and Atlantic, Waycross & Northern railroads. (By J. B. Leavitt in 1917.)

Station.	Latitude	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 34, center of track opposite	30 45 10.6	81 41 18.0	
Private-road crossing	30 45 49.8	81 41 16.6	3,960
Milepost 35, center of track opposite	30 46 02.9	81 41 16.2	1,320
Trestle A–36, over stream, center of	30 46 24.3	81 41 15.4	2,170
Public-road crossing	30 46 48.8	81 41 15 2	2,475
Do	30 47 16.3	81 41 20.7	2,820
Old grade crossing	30 47 44.2	81 41 26.4	2,860
Kingsland, 150 feet north of Carleton Hotel, at southwest corner of street intersection, 150 feet west of railroad station; iron post stamped "Prim. Trav. Sta. No. 14, 1917"; azimuth to center of track, 170° 04′ 32″	30 47 53.6	81 41 30.1	1,008
Kingsland, 0.25 mile east of, public-road crossing	30 47 47.3	81 41 06.4	2,168
Trestle, elevation 24.8 feet	30 47 45.5	81 40 40.6	2,252
Kingsland, 1 mile east of, just east of old sawmill site, 30 feet southeast of telephone post marked "T. R. x 32.3"	30 47 31.0	81 39 53.8	4,341
Kingsland, 4.2 miles southeast of, 200 feet west of private-road crossing, 45 feet south of center of track; iron post stamped "20 1917"	30 46 46.2	81 37 32.1	7,853
Public-road crossing, 180 feet east of telephone pole, marked "24.9 feet"	30 47 13.1	81 38 56.6	5,308
Scotchville station, 15 feet north of platform, in center of tie; nail; elevation of track 23.0 feet	30 46 18.6	81 37 09.6	10,837
Public-road crossing	30 46 11.5	81 37 05.5	800
Second-class road crossing, opposite telephone pole, marked "T. R. 19.3"	30 45 43.2	81 36 38.8	3,693
Public-road crossing opposite t. b. m. 16.2 feet	30 45 08.1	81 35 20.0	7,740

Along highways near south border of quadrangle. (By J. B. Leavitt in 1917.)

Primary Traverse Station No. 14, 1917, at Kingsland (previously described)	30 47 53.6	81 41 30.1	
Unfinished frame house, center of road opposite	30 48 18.8	81 42 31.1	5,900
Old railroad grade crossing, at second-class fork to south	30 48 29.4	81 43 53.1	7,231
Signboards painted "Kingsland, St. Marys," 30 feet west of, at southwest corner of cornfield, road forks	30 48 43.7	81 44 49.9	5,162

Along Seaboard Air Line Ry. in west part of quadrangle. (By Oscar Jones in 1917.)

Road crossing	30 59 37.4	81 43 51.1	
Refuga, opposite switch stand	30 59 22.0	81 43 48.0	1,570
Trestle, north end	30 58 32.1	81 43 37.8	5,120
Trestle, south end	30 58 24.3	81 43 36.2	800
Woodbine, 300 feet south of station, at junction of line to Ceylon	30 58 02.0	81 43 31.6	2,292
Woodbine, 300 feet south by 123 feet southwest of; iron bench-mark post	30 58 01.6	81 43 33.0	123
Road crossing	30 56 34.6	81 43 13.8	8,947
Do	30 56 10.2	81 43 08.9	2,499
Colesburg, road crossing	30 55 23.3	81 42 59.4	4,810
Colesburg, Dixie highway crossing	30 55 05.1	81 42 55.6	1,870
Trestle, north end	30 53 57.9	81 42 42.0	6,890
Seals, road crossing	30 52 14.3	81 42 21.0	10,620
Dixie highway crossing	30 52 02.7	81 42 18.6	1,190
Road crossing	30 51 07.2	81 42 07.4	5,690
Do	30 50 34.6	81 42 00.8	3,340
Trestle, south end of	30 49 54.0	81 42 52.7	4,170
Road crossing	30 49 19.9	81 41 45.8	3,491
Do	30 48 42.8	81 41 38.3	3,810
Kingsland, 75 feet west of northwest corner of station, 2 feet north of right-of-way post; iron post stamped "Prim. Trav. Sta. No. 14, K 1917"	30 47 53.6	81 41 30.1	5,015

Near Colesburg. (By E. L. McNair in 1917.)

T road northwest, at signboard painted "Owen Ferry"	30 55 10.2	81 44 49.8	
Colesburg, road crossing, center of Seaboard Air Line Ry	30 55 23.3	81 42 59.36	9,705

Magnetic declination near Colesburg, 1.0° E.

KINGSLAND QUADRANGLE—Continued.

Along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Bridge over small creek, center of	30 45 41.8	81 33 02.4	4,440
Bridge marked "15.4"	30 46 03.9	81 32 53.2	2,369
St. Marys, 4 miles northwest of, in road forks; iron post stamped "Prim. Trav. Sta. No. 25 K"	30 46 11.9	81 32 48.7	904
Old railroad grade crossing, elevation 203	30 46 45.0	81 33 05.5	3,649
Culvert marked "18.0"	30 47 20.4	81 33 03.2	3,583
T. b. m. 17.2, marked pine tree, 10 feet west of, at center of road	30 47 49.7	81 32 48.8	3,222
Crossroads, 60 feet north of, at T road north to Marianna Bluff; road east leads to St. Peters and road west along river; iron post stamped "Prim. Trav. Sta. No. 26 K"	30 48 33.3	81 32 33.9	4,591
Elliot Bluff, at center of road, opposite Mr. Pacettis's gate; nail	30 49 39.2	81 33 09.6	7,344
T. b. m. 22.9, center of road opposite	30 49 46.2	81 33 36.3	2,443
T road east, 80 feet east of J. D. Herrin's mail box, about 600 feet southwest of negro Baptist Church, marked "21.9" on post	30 49 59.4	81 33 53.9	2,030
Road fork north, near stump marked "17.5"	30 50 12.3	81 33 56.8	1,333
Gate marked "13.8"	30 50 39.7	81 33 47.9	2,876
Raymond Lewis's house, 300 feet east of, 15 feet west of corner of board fence, in edge of marsh; stake with nail in center	30 51 55.8	81 35 04.7	10,195
Harriet's Bluff, 400 feet north side of Crooked River, 100 feet southeast of road forks, 7 feet from 16-inch pine tree; iron post stamped "Prim. Trav. Sta. No. 27 K"	30 52 13.7	81 35 05.7	1,818
T road northeast	30 53 06.0	81 35 18.5	5,395
Old sawmill and old shack, 300 feet west of, 100 feet south of dim crossroads, 15 feet southwest of pine tree blazed with a small cross, center of county road	30 54 38.8	81 35 52.6	9,847
Forest View Church, 40 feet southeast of, 20 feet east of center of road; iron post stamped "Prim. Trav. Sta. No. 28 K"	30 55 29.4	81 35 35.8	5,308
Hermitage Swamp, center of bridge over creek in	30 55 39.7	81 36 43.4	5,981

From St. Marys northwest along highways to Ceylon.

Road forks, second-class road north along a woven wire fence through a large pasture	30 55 43.7	81 36 53.8	995
Abandoned tram-road crossing, 2 feet from wire fence; nail in tie	30 56 02.2	81 37 03.6	2,058
House, 10 feet southwest of corner of yard, a pole at the corner has cross arms suspending gourds for birds' nests	30 56 25.4	81 37 24.3	2,952
Road forks just east of swamp	30 57 31.1	81 38 07.0	7,611
Ceylon, Prim. Trav. Sta. No. 11J (not described)	30 57 44.7	81 39 07.5	5,452

From Ceylon west along highway to Woodbine. (By Oscar Jones in 1917.)

Old tramway-bed crossing	30 57 14.6	81 39 04.6	3,047
Crossroads at house	30 56 38.1	81 39 45.6	5,137
Road forks at A. B. Lang's mail box	30 56 37.1	81 40 16.5	2,700
Crossroads	30 56 54.0	81 40 48.6	3,284
Road forks at church	30 57 13.2	81 41 47.8	5,505
Crossroads	30 57 26.5	81 42 10.8	2,415
Road forks	30 57 37.1	81 43 02.2	2,965
Woodbine, road crossing	30 58 02.0	81 43 31.6	1,502

LELIATON QUADRANGLE.

From north border of quadrangle southwest along Georgia & Florida Ry. to west corner of quadrangle. (Unchecked spur line by Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	31 29 48.4	82 51 09.4	.....
Do	31 29 15.0	82 51 36.0	4,083
Do	31 28 37.9	82 52 15.4	5,080
North end of trestle	31 28 16.5	82 52 38.0	2,910
Road crossing	31 27 59.3	82 52 53.3	2,189
Do	31 27 26.0	82 53 22.2	4,190
Vickers, road crossing at	31 27 02.0	82 53 43.0	3,020
Road crossing	31 26 51.0	82 53 59.8	1,838
Bear Creek, road crossing at station	31 26 45.2	82 54 37.6	3,320
St. Illa, road crossing at	31 26 29.5	82 56 12.6	8,386
Road crossing	31 25 32.2	82 56 41.2	6,300
Mora, road crossing at	31 24 50.0	82 57 13.9	5,123
Road crossing	31 24 31.2	82 57 32.4	2,480
Do	31 24 02.4	82 57 56.1	3,563
Do	31 23 29.2	82 58 21.1	3,995
Oberry, road crossing at	31 23 06.2	82 58 49.2	3,360
Center of small trestle	31 22 42.2	82 59 30.3	4,315

LIMERICK QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″		*Feet.*
Milepost "Savannah 29," track opposite	31 50 36.6	81 29 45.6	
Private-road crossing at sawmill	31 50 44.0	81 29 31.6	1,415
Road crossing, 400 feet west of milepost "Savannah 27"	31 51 29.5	81 28 06.1	8,700
Road crossing, 550 feet east of milepost "Savannah 26"	31 52 02.4	81 27 04.4	6,270
Road crossing	31 52 22.4	81 26 26.8	3,816
Fleming station, 150 feet west of, 30 feet northwest of center of track; iron post stamped "Prim. Trav. Sta. No. 18, 1917 Mac". (Feb. 3, 1919, moved 77.3 feet west of above-described position).	31 52 48.7	81 25 37.9	
Fleming station, 600 feet north of north end of siding at, road crossing	31 53 10.6	81 24 56.2	
Road crossing	31 53 59.4	81 23 24.3	9,340
Do	31 54 19.8	81 22 45.9	3,895
Road crossing at sawmill	31 54 49.0	81 21 50.9	5,585
Road crossing	31 55 02.2	81 21 26.0	2,520
Milepost "Savannah 18," opposite	31 55 40.7	81 20 13.4	7,375
Road crossing 450 feet northeast of milepost "Savannah 17"	31 56 10.8	81 19 16.6	5,755
Ways station, road crossing	31 56 36.6	81 18 28.1	4,925
Ogeechee River, center of draw span over	31 57 14.2	81 17 17.0	7,213
Road crossing, second class	31 58 06.4	81 15 38.6	9,982

Magnetic declination for quadrangle, 0° 40′ E.

Along highways near north border of quadrangle. (By E. L. McNair in 1917.

Bryan-Liberty county line, center of road, 750 feet west of H. E. Drigger's house	31 57 52.5	81 28 07.7	
Flemington-Clyde road, 30 feet west and 15 feet north of T road corners, where road north leads to new bridge over Canoochee River; iron post stamped "Prim. Trav. Sta. No. 34, 1917 Mac."; azimuth to 10-penny nail in pine tree, 870 feet north, 185° 30′	31 57 58.0	81 27 32.6	3,077
Angle in road at point 20 feet north of bend in road	31 58 44.3	81 27 42.1	4,746
Angle in road, point about center of road	31 59 08.4	81 28 21.2	4,159
Road forks and second-class crossroad	31 59 12.7	81 28 51.5	2,648
Angle in road	31 59 11.5	81 29 49.5	4,996

Magnetic declination for west border of quadrangle, 0° 28′ E.

Along Seaboard Air Line Ry. (By E. L. McNair in 1917.)

Ways station, 200 feet south of, 60 feet southeast from road crossing, 20 feet northeast of center of public road; iron post stamped "Prim. Trav. Sta. No. 21, 1917 Mac."	31 56 17.1	81 18 11.9	
Private-road crossing	31 55 25.4	81 18 57.2	6,511
Mile post 120, center of track opposite	31 54 28.6	81 19 46.1	7,131
Marshall siding, switch stand at north end of	31 53 18.6	81 20 46.4	8,774
Private-road crossing	31 52 54.6	81 21 07.1	3,010
Trestle over creek, center of	31 51 30.7	81 22 19.4	10,525
Second-class road crossing	31 50 49.7	81 22 52.1	5,012
Limerick, road crossing	31 50 11.5	81 23 09.8	4,145
Private-road crossing	31 49 06.7	81 23 40.0	7,051
Do	31 48 27.7	81 23 58.2	4,240
Dorchester station, 220 feet south of southeast corner of, about 575 feet south of road crossing, 50 feet east of center of main track; iron post stamped "Prim. Trav. Sta. No. 22, 1917 Mac."	31 47 37.4	81 24 21.0	5,449
Private-road crossing	31 46 44.6	81 24 46.2	5,760
Do	31 45 55.1	81 25 09.2	5,386
Mile post 108, 230 feet north of, road crossing	31 45 20.7	81 25 25.2	3,740

LINCOLNTON QUADRANGLE.

Along highways near south border of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road northeast	33 45 03.8	82 19 34.3	.....
Forks of road, on south side of road, 100 feet west to store, 50 feet north to red-oak tree with platform built under it; iron post stamped "Prim. Trav. Sta. No. 35, 1918 H"	33 45 07.4	82 19 58.1	2,045
T road north	33 45 35.3	82 20 28.7	3,831
Cross roads at blacksmith shop	33 46 21.2	82 22 19.3	10,425
Road forks	33 46 23.6	82 22 34.3	1,293
Bridge	33 46 27.9	82 23 47.6	6,208
Road forks	33 46 31.1	82 24 28.3	3,446
T road south	33 46 51.6	82 25 10.6	4,137
Road forks	33 47 10.0	82 26 02.0	4,716
Road forks north of bridge	33 47 20.6	82 26 22.5	2,047
Second-class road forks	33 47 12.0	82 26 55.8	2,933
Lincolnton, crossroads at Lincolnton Mercantile Co	33 47 20.5	82 28 35.5	8,459
Lincolnton, crossroads at cemetery	33 47 20.8	82 28 48.8	1,130
Railroad crossing	33 46 17.0	82 29 50.6	8,297

Magnetic declination for south border of quadrangle, 0° 40′ E.

LUDOWICI QUADRANGLE.

Northeast along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Ludowici station, 121 feet southwest of corner of, 130 feet south of crossing of Main Street and Atlantic Coast Line R. R., 25 feet southwest of concrete walk, in open square, near two pine trees; iron post stamped "Prim. Trav. Sta. No. 16, 1917 Mac"	31 42 35.6	81 44 42.9	.....
Ludowici, intersection of Atlantic Coast Line and Georgia Coast & Piedmont railroads	31 42 39.4	81 44 38.3	560
Road crossing	31 43 16.6	81 43 29.0	7,064
Do	31 43 51.6	81 42 23.6	6,665
Bascot siding, road crossing	31 44 27.6	81 41 16.5	6,835
Road crossing, 370 feet northeast of milepost "Savannah 42"	31 44 38.2	81 40 56.6	2,025

Magnetic declination for line, 0° 16′ E.

Along highways near northwest corner of quadrangle. (By E. L. McNair in 1917.)

Angle in road	31 43 38.3	81 44 26.3	.....
Road forks	31 44 13.4	81 43 46.7	4,925
Bridge about 100 feet long, center of	31 44 35.3	81 43 22.0	3,074

Along Seaboard Air Line and Georgia Coast & Piedmont railroads. (By E. L. McNair in 1917.)

Warsaw, opposite station, 55 feet west and 20 feet south of intersection of Seaboard Air Line and Georgia Coast & Piedmont roads; iron post stamped "Prim. Trav. Sta. No. 23, 1917, Mac."	31 35 28.2	81 30 01.3	.....
Private-road crossing	31 35 43.1	81 31 29.0	7,736
Intersection of tangents	31 35 54.7	81 32 38.1	6,090
T. b. m. at end of trestle	31 36 36.2	81 33 49.5	7,465
Intersection of tangents	31 36 58.5	81 34 27.8	4,005
Old private-road crossing	31 37 17.4	81 35 12.0	4,270
Intersection of tangents	31 37 31.5	81 35 44.9	3,180
Tibet siding, 65 feet north of switchstand at south end of, 10 feet south of fence; iron post stamped "Prim. Trav. Sta. No. 24, 1917 Mac."	31 37 37.1	81 36 18.2	2,939
Intersection of tangents	31 37 39.2	81 36 36.4	1,589
Public-road crossing	31 37 47.6	81 36 48.0	1,310
Old road crossing	31 38 16.6	81 37 27.8	4,521
Do	31 38 41.2	81 38 01.8	3,846
Goose Pond, road crossing at	31 39 20.2	81 38 55.4	6,084
Road crossing	31 39 45 2	81 39 29.8	3,905

LUDOWICI QUADRANGLE—Continued.

Along Seaboard Air Line and Georgia Coast & Piedmont railroads. (By E. L. McNair in 1917.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing at "t. b. m. 79.4"	31 40 03.7	81 39 55.4	2,895
Intersection of tangents	31 40 45.1	81 40 52.2	6,449
Iron post 48 feet north by 28 feet east of road crossing, set by levelman	31 40 53.2	81 41 08.4	1,622
Trestle across large creek	31 41 09.8	81 41 45.4	3,611
Road crossing	31 41 24.9	81 42 18.0	3,205
Road crossing at elevation 69.5	31 41 51.8	81 43 16.1	5,705
Public-road crossing	31 42 09.3	81 43 53.8	3,711
Intersection of tangents	31 42 20.7	81 44 18.6	2,431
Ludowici, intersection of Atlantic Coast Line and Georgia Coast & Piedmont railroads (previously described)	31 42 39.4	81 44 38.3	2,548

Magnetic declination near northwest corner of quadrangle, 0° 48′ E.

Along Seaboard Air Line Ry. (By Oscar Jones in 1917.)

South abutment of small trestle	31 30 13.6	81 32 27.0	.....
Road crossing	31 30 52.8	81 32 08.8	4,260
Sign "Townsend 1 mile," track opposite	31 31 24.3	81 31 54.1	3,430
Townsend, road crossing	31 32 24.5	81 31 26.2	6,540
North end of trestle	31 33 02.5	81 31 08.5	4,130
Road crossing	31 33 44.6	81 30 48.9	4,580
South end of trestle	31 34 33.9	81 30 26.0	5,360
Warsaw (Darien Junction), crossing of Seaboard Air Line and Georgia Coast & Piedmont railroads	31 35 28.4	81 30 00.7	5,917

LUMBER CITY QUADRANGLE.

Along highways in south part of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
Hazelhurst, near crossing of Georgia & Florida Ry., about 50 meters west of stock pens, on left side of tracks of Southern Ry. between transfer track of Southern and Georgia & Florida railroads and track of Cash Grocery Co., 6 meters north of post marking maintenance limit of Southern Ry., along transfer track; Prim. Trav. Sta. Hurst, marked by a triangulation station mark embedded in top of concrete block; azimuth to Hazel, 303° 44′ 52.0″; back azimuth, 123° 44′ 58.0″. No elev	° ′ ″ 31 51 51.23	° ′ ″ 82 35 44.94	*Feet.* .....
Hazelhurst, crossing of Georgia and Florida Ry., southeast of	31 51 22.2	82 35 55.0	3,063
Second-class T road west at southeast corner of field	31 50 00.8	82 34 39.6	10,484
Opposite new schoolhouse	31 49 29.6	82 34 17.5	3,689
T road east at painted house	31 49 11.6	82 34 04.7	2,120
Straight road to southeast	31 48 09.7	82 33 56.4	6,300
Crossroads at Baptist Church	31 47 15.1	82 34 06.4	5,589
Calvary Baptist Church, 0.5 mile south of, on west side of county road, at second-class fork to west, 250 feet north of house; iron post stamped "Prim. Trav. Sta. No. 41, 1918 H"	31 46 47.5	82 34 14.5	2,871
Large post at southwest corner of field	31 46 51.6	82 34 58.2	3,790
Road opposite house, north of road	31 47 12.7	82 35 35.4	3,857
Roads north, south, and west at northeast corner of field	31 47 33.1	82 35 42.7	2,156
Crossroads 150 feet south of school	31 47 32.3	82 35 59.6	1,470
Roads east, west, and north at southwest corner of field	31 47 36.6	82 36 32.8	2,898
Crossroads in woods	31 47 44.3	82 36 35.8	811
T road east at Mr. Hansen's house	31 47 55.7	82 37 15.1	3,583
T road west at J. Hansen's house	31 47 00.3	82 37 38.3	5,946
Elbow north and east at house	31 47 11.1	82 38 18.6	3,640
Crossroads, at southwest corner of field	31 47 36.8	82 38 29.4	2,755
Gateway, 300 feet south of house	31 48 02.2	82 38 45.4	2,921
Roper, road crossing	31 48 43.3	82 39 05.9	4,416
South end of lane, at house	31 49 10.5	82 40 18.1	6,849
Second-class road crossing county road, 800 feet north of painted house	31 49 32.2	82 40 21.5	2,215
Big corner post at northeast corner of field	31 49 33.5	82 40 23.5	212
Opposite house, brick chimney, on north side	31 49 33.1	82 41 32.7	5,975
Road opposite church gate, 30 feet southwest of burned snag	31 49 38.2	82 42 05.8	2,898
Fork of road to Burkett's Ferry and to Hazelhurst; iron post stamped "Prim. Trav. Sta. No. 42, 1918 H"	31 49 37.8	82 43 21.9	6,572

LUMBER CITY QUADRANGLE—Continued.

Along highways in south part of quadrangle. (By G. T. Hawkins in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads, county road	31 50 12.9	82 43 30.0	3,613
Road fork east, 300 feet southwest of house	31 50 51.2	82 43 55.8	4,468
Opposite milepost to ferry	31 51 30.5	82 43 20.7	4,509
Fork at northeast corner of field	31 51 35.8	82 43 25.9	700
Middle of bridge	31 53 39.5	82 44 31.3	.....
Milepost 4 (stone)	31 54 05.3	82 43 54.8	4,085
Opposite gate to cemetery	31 54 28.0	82 42 17.4	8,701
T road northwest	31 54 36.3	82 42 03.4	1,478
Lumber City, on left side of tracks of Southern Ry., 3 meters north of River Street, 10 meters south of house track switch, 2.65 meters from left rail of track; Prim. Trav. Sta. Lumber, marked by triangulation station mark embedded in top of block of concrete (U. S. C. & G. S. b. m. Y 13); azimuth to Octa 334° 27′ 39.5″; back azimuth 154° 28′ 03.6″	31 56 01.72	82 40 59.55	10,231

Magnetic declination for south part of quadrangle, 1° 30′ E.

From south border of quadrangle northeast along Georgia and Florida Ry. to Hazelhurst. (By Oscar Jones in 1917.)

Brooker, at road crossing	31 45 01.1	82 41 03.3	.....
Road crossing	31 46 12.4	82 40 44.7	7,380
Do	31 46 49.7	82 40 41.6	3,777
Do	31 47 15.7	82 40 35.7	2,680
Do	31 47 56.8	82 39 53.1	5,552
Roper, road crossing (also on Hawkins's line)	31 48 43.3	82 39 05.9	6,218
Road crossing	31 49 15.5	82 38 23.6	4,900
Do	31 49 37.8	82 37 49.5	3,720
Do	31 50 19.4	82 36 59.6	6,027
Do	31 50 41.0	82 36 31.4	3,280
Do	31 51 01.4	82 36 05.1	3,078
Do	31 51 22.0	82 35 55.1	2,268
Hazelhurst, U. S. C. & G. S. station Hurst (previously described)	31 51 51.23	82 35 44.94	3,090

MACCLENNY QUADRANGLE.

Along highways from Macclenny, Fla., to Stokesville, Ga. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Bridge, north end of	30 22 22.7	82 04 24.5	.....
Road forks, blazed burnt stump west	30 22 40.9	82 04 17.1	1,953
Stokesville, 40 feet east of store on north side of road, 50 feet west of gate; iron post stamped "Prim. Trav. Sta. No. 5, S 1917"	30 23 01.3	82 04 20.5	2,078

Along highways from Stokesville to St. George. (By H. S. Senseney in 1917.)

Road forks near house of Mr. Thomas, road north to St. George, road east to Bryceville	30 23 18.4	82 03 09.9	.....
Bridge, south end of	30 23 29.4	82 03 10.3	1,120
Signpost "4–9"	30 23 38.7	82 03 10.6	936
Signpost "5–8"	30 24 22.1	82 03 10.7	4,387
Bridge, center of	30 24 46.3	82 03 02.9	2,537
Signpost "6–7"	30 25 13.9	82 03 06.4	2,805
Signpost "7–6"	30 26 05.4	82 03 03.0	5,212
Crossroads	30 26 16.7	82 02 57.2	1,245
Bridge, south end of	30 26 44.2	82 02 46.1	2,944
Signpost "9–5"	30 26 58.1	82 02 46.6	1,409
Signpost "10–4"	30 27 47.9	82 02 39.0	5,078
Signpost "11–3"	30 28 39.0	82 02 25.7	5,291
Signpost "12–2"	30 29 31.6	82 02 21.6	5,330
T road east	30 29 53.2	82 02 16.2	2,225

MACON QUADRANGLE.

South along highways and Central of Georgia Ry. near east border of quadrangle. (By C. B. Kendall and C. W. Arnold in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks, 25 feet southwest of, 35 feet east of house; iron post stamped "Prim. Trav. Sta. No. 11, 1916"	32 59 29.4	83 30 08.8	.....
Crossroads, center of	32 58 25.6	83 30 54.8	7,543
Central of Georgia Ry., center of road crossing on	32 57 48.3	83.31 15.4	4,159
Road crossing, Central of Georgia Ry	32 57 03.1	83 30 55.4	4,873
Do	32 56 12.7	83 30 28.9	5,572
Crossroad, center of, Milledgeville-Macon and Griswoldville-Gray roads	32 55 49.7	83 30 05.6	3,053
Road forks, center of, Macon-Gordon and Macon-Griswoldville roads	32 51 19.9	83 30 20.0	.....
Second-class road forks to south	32 51 02.7	83 31 06.3	4,318
Second-class road west, center of road forks	32 50 15.3	83 31 10.4	4,801
Road north to white house, center of forks at	32 49 30.1	83 31 39.0	5,175
Second-class road southwest, center of forks	32 48 50.1	83 31 06.9	4,884
Macon, Dublin & Savannah R. R., Jeffersonville and Macon highway crossing, about 0.5 mile west of Dry Branch	32 48 05.1	83 30 20.8	6,016
Road forks to west, center of	32 46 10.0	83 30 06.5	.....

Magnetic declination for east border of quadrangle, 1° 34′ E.

Southwest along Georgia R. R. (By E. L. McNair in 1918.)

Second-class road crossing	32 56 38.5	83 30 07.8	.....
Public-road crossing	32 56 13.0	83 30 29.5	3,170
Overhead bridge of Central of Georgia Ry. over Georgia R. R.	32 55 52.1	83 30 47.0	2,560
Roberts station, highway crossing over railroad	32 54 55.2	83 31 35.5	7,110
Milepost 69	32 54 37.3	83 31 50.7	2,220
Second-class road crossing	32 54 03.3	83 32 19.4	4,220
Do	32 53 45.2	83 32 27.1	1,945
Public-road crossing	32 53 08.2	83 32 25.9	3,745
Do	32 52 29.2	83 32 24.5	3,950
Crossing of Central of Georgia Ry. overhead bridge	32 51 51.2	83 32 44.1	4,184
Milepost 73	32 51 28.6	83 33 05.2	2,910
Mogul station, public-road crossing	32 50 58.6	83 33 43.5	4,456
Lakeside Pleasure Resort, road crossing	32 50 39.0	83 34 32.7	4,644
Crossing of Macon and Camp Wheeler road under railway	32 50 48.3	83 34 44.6	1,384
Road crossing	32 50 53.7	83 35 18.0	2,905
Do	32 50 28.6	83 35 59.2	4,330
Do	32 50 23.5	83 36 43.3	3,800
Macon Terminal passenger station, 0.25 mile east of, on line of Central of Georgia Ry. (U. S. C. & G. S. b. m. O_{19})	32 50 11.7	83 37 11.3	2,670
Macon, Boundary street, crossing of Central of Georgia Ry. at junction	32 49 13.4	83 38 03.3	7,376
Macon Terminal Passenger Station, about 1.5 miles southwest of, 20 rails west of an overhead crossing of Central of Georgia Ry., about 200 meters east from point of tangency, west bound track, 2 rails west of Waterville road, on left side of Central of Georgia Ry. track, 7.510 meters from rail of westbound track; Prim. Trav. Sta. Renner, marked by a triangulation station mark embedded in a block of concrete (U. S. C. & G. S. b. m. V_{19}); azimuth to Southern, 291° 39′ 04.2″; back azimuth, 111° 39′ 13.4″. Elevation 338.687 feet	32 48 15.9	83 38 10.7	5,844

MELDRIM QUADRANGLE.

Northwest along Central of Georgia Ry. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	32 07 05.2	81 15 39.0	.....
Do	32 07 18.5	81 16 30.2	4,600
Center of track at switch stand	32 07 32.6	81 17 24.7	4,900
Bloomingdale station, road crossing	32 07 42.5	81 18 02.7	3,420
Center of trestle 13.9	32 08 04.5	81 19 35.5	8,279
Chatham-Effingham county line	32 08 09.1	81 19 58.0	1,990
Center of concrete culvert	32 08 15.1	81 20 29.3	2,759

MELDRIM QUADRANGLE—Continued.

Northwest along Central of Georgia Ry. (By Oscar Jones in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	32 08 17.6	81 20 43.5	1,250
Center of concrete culvert	32 08 25.9	81 21 35.3	4,530
Center of trestle 165	32 08 30.9	81 22 10.6	3,080
Meldrim station, 150 feet east of, 20 feet south of Central of Georgia Ry. track; iron post stamped "Prim. Trav. Sta. No. 2, 1918 J"	32 08 34.5	81 22 38.5	2,420
Center of brick culvert	32 08 51.0	81 23 08.2	3,049
Road crossing	32 09 07.5	81 23 18.6	1,890
Eden station, road crossing	32 10 20.2	81 23 22.7	7,360
Road at schoolhouse	32 10 55.4	81 23 23.4	3,550
Doswell road crossing	32 12 44.1	81 23 25.4	10,990
Road crossing	32 13 20.7	81 23 26.0	3,700
Do	32 14 29.8	81 23 27.2	6,980

Northwest along Savannah & Statesboro Ry.

Meldrim station, Prim. Trav. Sta. No. 2	32 08 34.5	81 22 38.5	.....
Road crossing	32 08 39.4	81 23 27.0	4,199
East end of trestle over Ogeechee River	32 08 39.9	81 24 05.5	3,308
West end of trestle over Ogeechee River	32 08 36.1	81 24 32.4	2,350
Cuyler station, center of Seaboard Air Line Ry., opposite semaphore	32 08 29.7	81 25 14.1	3,638
Road crossing	32 09 15.6	81 25 21.0	4,682
Do	32 09 54.8	81 25 38.4	4,229
Do	32 10 09.0	81 25 48.1	1,660
Do	32 10 24.1	81 25 52.9	1,587
Do	32 10 54.3	81 26 01.3	3,130
Do	32 11 20.9	81 26 08.8	2,770
Blitchton, road crossing	32 11 50.0	81 26 17.0	3,020
Road crossing	32 12 23.5	81 26 26.3	3,480
Do	32 12 55.6	81 26 35.3	3,330
Do	32 13 15.8	81 26 41.1	2,100
Eldora, road crossing	32 13 49.6	81 26 50.4	3,510
Road crossing	32 14 35.4	81 27 12.1	4,992
Do	32 14 44.1	81 27 17.4	990

East along highways near north border of quadrangle.

Road fork	32 13 00.2	81 29 25.5	.....
Road fork at Edward's store	32 12 57.1	81 29 04.1	1,860
Road fork, Savannah, Statesboro, and Eldora roads	32 12 45.4	81 28 25.1	3,554
Crossroads	32 13 00.0	81 27 46.4	3,637
Do	32 13 36.6	81 27 06.9	5,012

Magnetic declination for northwest part of quadrangle, 0.2° E.

West along Seaboard Air Line Ry. (By Oscar Jones in 1917.)

West end of trestle over creek	32 08 07.5	81 26 00.6	.....
Arden, 500 feet west of, road crossing	32 07 47.1	81 27 10.4	6,347
Road crossing	32 07 39.6	81 27 45.7	3,120
Do	32 07 31.6	81 28 23.8	3,380
Ellabelle, 150 feet southeast of station; iron post stamped "Prim. Trav. Sta. No. 23, J 1918"	32 07 23.0	81 29 09.4	4,010

South along highways near west border of quadrangle.

Ellabelle, Prim. Trav. Sta. No. 23, J 1918 (previously described)	32 07 23.0	81 29 09.4	.....
Crossroads	32 06 45.9	81 29 05.6	3,759
Road fork	32 05 52.0	81 28 59.4	5,470
Crossroads	32 05 18.6	81 28 55.5	3,380
Road fork, 150 feet south of culvert	32 03 51.6	81 29 40.5	9,608
Road fork	32 03 24.6	81 29 49.2	2,822

Magnetic declination for west border of quadrangle, 0.4° E.

MERIWETHER QUADRANGLE.

Along railroad. (By C. B. Kendall and C. W. Arnold in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Public-road crossing, center of track	33 01 54.4	83 15 19.0	.....
Do	33 00 46.0	83 15 47.2	7,315
Milledgeville, 400 feet south of 5-mile post from, near Mrs. Pierce's residence, 50 feet east of road crossing, on north edge of road; iron post stamped "Prim. Trav. Sta. No. 1, 1916"	33 00 14.5	83 15 11.2	4,422

West along highways near south border of quadrangle.

Road crossing (previously described)	33 00 46.04	83 15 47.21	.....
Road forks to south, center of road	33 01 00.6	83 16 44.3	.....
Road forks to north, center of	33 01 22.4	83 16 58.9	2,532
Road forks to south, center of	33 02 18.5	83 18 14.5	8,580
Farm road to north, center of forks	33 01 59.7	83 18 50.0	3,565
Road forks to northwest, center of	33 01 29.4	83 19 47.0	5,740
Road forks southeast, center of small triangle	33 00 45.5	83 20 36.2	6,096
Road forks to south, center of	33 00 11.8	83 21 51.8	7,290
Road forks to northeast, center of	33 00 20.2	83 25 49.0	.....
Commissioner Creek, center of railroad bridge over	33 00 07.9	83 26 36.7	4,247
Road forks at J. F. Gray's R. F. D. mail box, center of	33 00 06.8	83 27 39.3	5,328

Magnetic declination in south border of quadrangle, 1° 28′ E.

Southwest along Georgia R. R. (By E. L. McNair in 1918.)

Highway crossing over railroad	33 05 44.8	83 15 24.9	.....
State Farm station, road crossing	33 05 21.1	83 16 07.4	4,338
Creek crossing, small wood truss	33 04 55.5	83 17 09.6	5,886
Road crossing	33 04 31.6	83 18 18.9	6,373
Second-class road crossing	33 04 20.2	83 18 59.1	3,610
Creek crossing, trestle over	33 04 12.8	83 19 25.3	2,350
Public-road crossing under railway	33 03 46.1	83 20 26.5	5,868
Brown station, public-road crossing	33 02 50.5	83 21 27.8	7,667
Second-class road crossing	33 02 32.2	83 22 42.0	6,578
Public-road crossing	33 02 23.4	83 23 21.4	3,475
Highway crossing under railway	33 02 07.8	83 24 31.1	6,140
Haddocks station, 700 feet east of, 25 feet south of center of track, on bank, 2 feet north of fence corner at section house; iron post stamped "Prim. Trav. Sta. No. 162, 1918 Mac."; azimuth to right-hand edge of chimney on south end of house, about 1,000 feet distant, 225° 34′ 22″	33 01 52.8	83 25 36.3	5,749
Highway crossing under railway	33 01 29.3	83 26 24.8	4,772
Public-road crossing	33 00 43.3	83 26 32.3	4,689
Road crossing under south end of trestle	33 00 07.2	83 26 37.5	3,675

MILLEDGEVILLE QUADRANGLE.

Along railroad. (By C. B. Kendall and C. W. Arnold in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milledgeville, southeast corner of iron picket fence at courthouse; iron post stamped "Prim. Trav. Sta. No. 19, 1916"	33 04 50.8	83 13 44.2	.....
Milledgeville, cupola of county courthouse	33 04 51.6	83 13 45.4	131
Milledgeville station, 600 feet northwest of, at public-road crossing, center of track	33 04 44.8	83 14 11.3	2,315
Carling station, 300 feet south of, under highway bridge, center of track	33 03 19.7	83 14 17.8	8,622
Section house, at public-road crossing, center of track	33 02 32.9	83 14 31.1	4,863
Road forks at road west, center of	33 00 56.1	83 00 35.6	.....
Deepstep, 3 miles west of; Giles crossroads, 500 feet west of courthouse 99th district, at junction of Milledgeville-Sanders road and Indian trail road leading north to Devereus; iron post stamped "Prim. Trav. Sta. No. 21, 1906 Ga."	33 01 51.9	83 00 32.4	5,645

MILLEDGEVILLE QUADRANGLE—Continued.

Southwest along Georgia R. R. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Third-class road crossing	33 14 42.4	83 02 27.2	.....
Second-class road crossing	33 13 42.5	83 03 08.9	7,013
Public-road crossing	33 13 22.4	83 03 49.1	3,970
Road crossing over railroad	33 13 20.2	83 04 23.9	2,970
Devereux station, road crossing at west end of	33 13 19.6	83 04 34.6	905
Highway crossing under railroad	33 13 22.8	83 05 08.9	2,937
Public-road crossing	33 13 14.6	83 05 25.7	1,647
Road crossing over railroad	33 12 33.9	83 06 15.8	5,919
Road crossing near switch stand at spur	33 12 05.1	83 06 38.6	3,499
Highway crossing under railroad	33 11 12.7	83 06 53.4	5,432
Carr's station, directly opposite office window, 120 feet north of road crossing, 15 feet east of center of track, near mail crane; iron post stamped "Prim. Trav. Sta. No. 161, 1918 Mac."	33 10 57.6	83 06 55.5	1,541
Highway crossing over railroad	33 10 27.9	83 07 17.2	3,517
Milepost 37	33 10 15.0	83 07 48.7	2,975
Milepost 38	33 09 42.1	83 08 34.6	5,123
Road crossing	33 09 08.1	83 09 34.7	6,161
Milepost 40	33 08 55.2	83 10 17.3	3,851
Public-road crossing	33 08 31.8	83 10 47.8	3,503
Road crossing over railroad	33 07 42.7	83 11 24.0	5,838
Road crossing	33 07 32.3	83 11 38.6	1,622
Center pier of Georgia R. R. bridge over Oconee River	33 06 49.9	83 12 09.4	5,019
Private-road crossing	33 06 36.7	83 12 36.2	2,636
Milepost 44, U. S. G. S. aluminum B. M. on top	33 06 22.0	83 12 50.5	1,920
Road crossing	33 06 02.8	83 13 09.0	2,500
....Do	33 05 45.9	83 13 25.3	2,200
Milledgeville station, 600 feet west of, at street crossing, center of main track	33 05 26.7	83 13 47.4	2,700
Public-road crossing	33 05 25.0	83 14 11.8	2,075

MILLEN QUADRANGLE.

Along Savannah & Atlanta Ry. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing at Bill Davis's flag stop	32 59 58.1	81 49 10.8	.....
Road crossing	32 59 42.5	81 48 31.3	3,721
Do	32 59 25.8	81 47 48.6	4,008
Do	32 59 14.9	81 47 21.0	2,562
Milepost 79, center of track, opposite	32 58 52.2	81 46 23.5	5,406
Sardis station, across track from, 20 feet northwest of line of rear end of freight house; iron post stamped "Prim. Trav. Sta. No. 106, 1918 Mac."	32 58 31.6	81 45 29.8	5,033
Road crossing	32 58 21.8	81 45 06.4	2,228

Northeast along highway through center of quadrangle.

Center of bridge at creek crossing	32 56 34.6	81 47 10.7	5,500
Road fork	32 56 56.7	81 46 30.5	4,092
Do	32 57 39.8	81 46 00.1	5,055
Crossroads	32 57 46.5	81 45 44.4	1,510

West along highway near south border of quadrangle.

Road fork	32 49 28.8	81 45 28.2	.....
Crossroads	32 49 29.1	81 46 17.7	4,220
Do	32 49 28.1	81 46 55.7	3,245
Edenfield bridge, center of	32 49 39.1	81 48 13.8	6,755
Center of bridge	32 49 36.3	81 49 19.6	5,620
Road fork	32 49 20.6	81 50 30.0	6,215
Millen, 5 miles east of, near milepost 5, 20 feet north of center of road; iron post stamped "Prim. Trav. Sta. No. 121, 1918 Mac."; azimuth to south edge of brick chimney in west end of house, 1,500 feet distant, 256° 54′ 00″	32 49 05.0	81 51 33.4	5,638

MILLEN QUADRANGLE—Continued.

Along highway near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads	32 48 32.0	81 45 08.9	.....
Road fork at end of lane	32 48 14.1	81 45 29.4	2,512
Center of bridge	32 47 53.9	81 45 24.4	2,081
Bay Branch Church, crossroads at	32 46 57.6	81 45 24.5	5,688

Magnetic declination for east border of quadrangle, 0° 20′ E.

Along highways near center of quadrangle.

Crossroad, 430 feet west of creek ford	32 49 04.1	81 52 25.6	.....
Road fork	32 48 34.8	81 53 35.1	6,635
Center of bridge	32 48 30.8	81 54 40.6	5,598
Road fork	32 48 32.0	81 55 18.0	3,200
Millen, junction of Masonic and Winthrop avenues	32 48 12.8	81 56 14.8	5,220

Northeast along highway through center of quadrangle.

Center of road opposite signpost painted "Millen 1 mile"	32 48 56.6	81 55 46.1	.....
Crossroads	32 49 29.9	81 55 10.1	4,556
Road fork	32 50 03.2	81 54 38.7	4,309
T road west	32 50 45.5	81 54 29.3	4,350
T road east	32 51 14.8	81 54 23.8	3,000
T road east near schoolhouse	32 52 05.0	81 54 00.6	5,457
T road west	32 52 46.4	81 53 27.5	5,048
Crossroads	32 53 21.6	81 53 00.3	4,258
Millen, 9 miles northeast of, road to Sardis, 70 feet south of crossroads, 8 feet south of small double oak tree; iron post stamped "Prim. Trav. Sta. No. 122, 1918 Mac."; azimuth to north edge of chimney on west end of house, about 1,000 feet distant, 289° 31′ 45″	32 54 27.3	81 51 18.7	10,913
Angle in road at top of hill	32 55 17.7	81 50 28.2	6,674
Crossroads, 850 feet south of church	32 55 34.1	81 50 02.1	2,783
Beaver Dam Creek, center of bridge over	32 56 12.4	81 48 54.6	6,938
Milepost 13, center of road opposite	32 56 32.8	81 48 15.2	3,943

Along highways near east border of quadrangle.

Crossroads	32 48 32.0	81 45 08.9	6,371
Road fork at end of lane	32 48 14.1	81 45 29.4	2,512
Center of bridge	32 47 53.9	81 45 24.4	2,081
Bay Branch Church, crossroads at	32 47 53.9	81 45 24.4	2,081

Magnetic declination for east border of quadrangle, 0° 20′ E.

Emalane, on west side of railroad and north edge of wagon road, 70 feet northwest of station, near telegraph pole; iron post stamped "Prim. Trav. Sta. No. 33, 1918 H," 570 feet northeast; azimuth, 214° 05′ 00″	32 45 34.1	81 59 49.9	.....
Milepost 41, railroad track opposite	32 46 22.6	81 59 00.0	6,497
Sawmill, road crossing at	32 46 44.9	81 58 28.2	3,531
Millen, road crossing 1.5 miles southwest of	32 47 16.0	81 57 43.9	4,910
Millen; iron post stamped "Prim Trav. Sta. No. 11, 1918 H"	32 48 05.6	81 56 33.0	7,866

Along highways near west border of quadrangle.

Perkins, 1 mile west of, crossroads	32 54 36.5	81 58 00.2	.....
Perkins, 2 miles west of, crossroads, 20 feet east of two mail boxes	32 54 38.5	81 59 26.0	7,380

Along Central of Georgia Ry. near west border of quadrangle.

Road crossing, 1,750 feet north of milepost 92	32 59 42.6	81 58 17.3	.....
Milepost 91, railroad track opposite	32 58 33.6	81 58 02.9	7,070
Mumnerlyn, road crossing at station	32 57 10.1	81 57 45.4	5,400
Milepost 88, road crossing 700 feet north of	32 56 06.3	81 57 32.1	6,550
Burke-Jenkins county line, crossing of	32 55 22.9	81 57 23.0	4,450
Perkins, road crossing at station	32 54 31.4	81 57 12.3	5,277

MILLEN QUADRANGLE—Continued.

Along Central of Georgia Ry. near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 82, railroad track opposite	32 48 13.8	81 59 47.6	.....
Milepost 81, road crossing 1,500 feet west of, gates north and south	32 48 01.7	81 59 06.2	3,740
Road crossing, gates north and south	32 47 50.9	81 58 16.2	4,406
Millen, 390 feet west of station, 10 feet north of railroad; iron post stamped "Prim. Trav. Sta. No. 11, 1918 H"; 960 feet northwest to point on west rail, azimuth, 124°24′30″; 587 feet southwest to point on south rail, azimuth, 78°55′00″	32 48 05.6	81 56 33.0	8,937
Millen, road crossing 1 mile north of	32 48 39.7	81 56 44.1	3,743
Millen, road crossing 2 miles north of, 30 feet west to crossing sign	32 49 30.2	81 56 41.6	5,108
Road crossing, 50 feet northwest to crossing sign	32 50 25.7	81 56 38.8	5,608
Road crossing in front of large house	32 51 09.6	81 56 36.7	4,440
Milepost 48, road crossing 400 feet north of	32 51 44.8	81 56 37.6	3,560
Lawton, 140 feet south of station, on east side of railroad; iron post stamped "Prim. Trav. Sta. No. 12, 1918 H"; 2,100 feet north is point on east rail, azimuth, 169°37′00″; 802 feet south is point on west rail, azimuth, 350°55′15″	32 52 22.6	81 56 45.3	3,870
Milepost 47, railroad track opposite	32 53 24.2	81 56 58.3	6,320
Milepost 46, railroad track opposite	32 54 15.8	81 57 09.1	5,300
Perkins, road crossing at station	32 54 31.4	81 57 12.3	1,600

Along Central of Georgia Ry. from Millen southeast.

Millen, 1 mile southeast of, road crossing	32 47 55.9	81 55 27.5	.....
Milepost 77, 1,500 feet southeast of, road crossing, 20 feet east to crossing sign	32 47 23.5	81 54 46.6	4,787
Milepost 76, 300 feet southeast of, road crossing	32 46 47.9	81 54 22.6	4,141
Paramore Hill, road crossing at station	32 45 27.8	81 53 24.7	9,486

MONIAC QUADRANGLE.

Along highway near St. George. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Signpost "1-13"	30 30 21.8	82 02 09.2	.....
Crossroads	30 30 29.7	82 02 07.3	815
St. George, railroad crossing at depot	30 31 15.4	82 02 15.2	4,568

East along Georgia Southern & Florida Ry. from St. Marys River near Baxter, Fla., to St. Marys River near St. George, Ga.

State line post (Florida-Georgia), center of bridge opposite	30 30 54.2	82 13 46.1	.....
Moniac, road crossing east of station	30 31 02.0	82 13 27.8	1,784
Road crossing at gates	30 31 16.4	82 12 30.6	5,214
Do	30 31 18.3	82 11 37.8	4,620
Milepost "35-227"	30 31 22.1	82 09 50.2	9,415
Road crossing at gates and platform	30 31 18.1	82 09 07.8	3,732
Milepost "33-229", 15 feet south of; iron post stamped "Prim. Trav. Sta. No. 10, S 1917"	30 31 00.6	82 07 54.3	6,668
Milepost "32-230"	30 30 58.3	82 06 54.0	5,278
Milepost "31-231"	30 30 55.9	82 05 53.6	5,290
Milepost "30-232"	30 31 00.6	82 04 53.5	5,275
Milepost "29-233"	30 31 06.2	82 03 53.5	5,280
Road crossing	30 31 10.6	82 03 05.9	4,185
St. George, railroad crossing at depot	30 31 15.4	82 02 15.2	4,458
Road crossing	30 31 16.1	82 01 40.4	3,050
St. Marys River, west end of railroad bridge over	30 31 16.7	82 01 00.2	3,515

MONIAC QUADRANGLE—Continued.

From north border of quadrangle south along highways to St. George. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 8	30 44 16.3	82 04 18.1	
Two bridges, south end of larger one	30 43 22.2	82 04 13.8	5,487
Crossroads, house west	30 43 08.9	82 04 09.0	1,402
Milepost 11	30 41 39.0	82 03 50.2	9,234
Road forks, blazed pine tree to west	30 41 10.8	82 03 39.2	3,005
Toledo, 1.8 miles north of, 30 feet west by 12 feet north of crossroads; iron post stamped "Prim. Trav. Sta. No. 16, S 1917"	30 39 40.9	82 03 22.4	9,192
Toledo, in front of store, center of road	30 38 09.2	82 03 08.9	9,346
Road east to house, mail box west	30 37 06.5	82 02 57.5	6,411
Crossroads, mail box southeast	30 36 05.6	82 02 47.9	6,209
Boone Church, 1,435 feet south of, north end of bridge	30 34 36.2	82 03 11.3	9,255
Road forks	30 33 56.8	82 03 04.8	4,022
T road east	30 33 11.8	82 02 42.2	4,950
St. George, north end of Main Street, where power line turns east; crossroads	30 31 35.8	82 02 18.1	9,927
St. George, (tie point) railroad crossing at station	30 31 15.35	82 02 15.2	2,082

Magnetic declination for east center of quadrangle, 1.6° E.

Along highways near north border of quadrangle (part of single spur line; positions unreliable). (By E. L. McNair in 1917.)

Tramroad crossing, traveled road	30 44 37.7	82 07 32.5	
Camp Cornelia, 144 feet S. 29° W. from nearest corner of G. S. Roddenberry's house, 110 feet north of old canal, on embankment of canal in open ground; iron post stamped "Prim. Trav. Sta. No. 52, 1917 Mac."	30 44 19.1	82 07 42.2	2,060
Tangent intersection of two long straight stretches of canal, point is on bank, 25 feet south of center of canal, marked by tall pine stake, 10 feet south is a blazed pine tree 6 inches in diameter, with copper nail and washer and marked with red lead	30 44 05.5	82 09 24.7	9,045
Old sunken barge, top of	30 44 13.7	82 10 12.9	4,290
Canal forks, center of canal	30 44 13.96	82 10 16.4	306
Tripod in water, near junction of canals on center line of canal east and west	30 44 12.6	82 11 00.0	3,804
Canal junction, 75 feet northwest of, 40 feet north of canal, in root of pine tree blazed and marked "U. S."; copper nail and washer	30 44 49.4	82 11 18.2	4,046
Canal, south bank of, pine tree blazed on two sides and marked with red "U. S." in root; copper nail	30 44 59.8	82 12 16.6	5,202

Magnetic declination near north border of quadrangle, 1.2° E.

NAHUNTA QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost "Savannah 90", center of track opposite	31 08 28.4	81 59 55.5	2,870
Hickox station, opposite south end of, 32 feet west of center of track, in line with telegraph poles, on bank; iron post stamped "Prim. Trav. Sta. No. 7, 1917 Mac."; azimuth to switchstand, about 1,500 feet south of post, 9° 46′ 30″	31 09 04.4	81 59 48.0	3,699
Road crossing, east rail at	31 09 39.2	81 59 40.0	3,579
Milepost "Savannah 88," east rail opposite	31 10 11.1	81 59 33.0	3,285
Milepost "Savannah 87," track opposite	31 11 02.5	81 59 21.8	5,280
Road crossing, center of track at	31 11 45.3	81 59 12.5	4,400
Nahunta, intersection of Atlantic Coast Line's tracks	31 12 13.9	81 59 06.3	2,934
Nahunta, about 785 feet north of railroad crossing, 43 feet west of center of main track of Atlantic Coast Line R. R.; just north of tool house; iron post stamped "Prim. Trav. Sta. No. 8, 1917 Mac."; azimuth to semaphore stand, about 1,440 feet north, 192° 00′	31 12 21.6	81 59 05.1	788
Road crossing, center of track at	31 13 05.7	81 58 55.0	4,544
Do	31 13 51.2	81 58 45.0	4,675
Do	31 14 40.1	81 58 34.4	5,020

Magnetic declination for line, 0° 57′ E.

NAHUNTA QUADRANGLE—Continued.

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Prim. Trav. Sta. No. 8, 1917 (previously described)	31 12 21.61	81 59 05.10	.....
Road crossing	31 12 13.1	81 59 11.8	1,039

Along Atlantic Coast Line R. R. in north part of quadrangle. (By Oscar Jones in 1917.)

Road crossing	31 14 30.2	81 45 29.0	.....
Do	31 14 10.1	81 46 16.2	4,579
Do	31 13 54.8	81 46 56.7	3,837
Waynesville, 100 feet north of station, road crossing	31 13 50.9	81 47 22.9	2,310
Road crossing	31 13 43.8	81 48 10.9	4,230
Center of trestle	31 13 35.0	81 49 45.4	8,260
Atkinson road crossing	31 13 25.5	81 50 50.8	5,760
Road crossing	31 13 20.7	81 51 24.2	2,940
Satilla River, east abutment of trestle over	31 13 17.3	81 51 47.3	2,030
Satilla River, west abutment of trestle over	31 13 13.8	81 52 11.4	2,130
East abutment of trestle	31 13 08.6	81 52 47.1	3,140
West abutment of trestle	31 13 06.9	81 52 59.4	1,080
Road crossing	31 13 02.5	81 53 29.4	2,650
Lulaton, 200 feet south of road crossing	31 12 56.0	81 54 14.6	3,980
Center of small trestle	31 12 45.8	81 55 24.4	6,140
Road crossing	31 12 38.3	81 56 15.8	4,530
Do	31 12 29.8	81 57 14.3	5,160
Do	31 12 19.9	81 58 22.0	5,960
Do	31 12 15.4	81 58 53.1	2,740
Nahunta Y of Atlantic Coast Line R. R	31 12 13.5	81 59 06.3	1,166
Prim. Trav. Sta. No. 8, 1917, Mac. (previously described)	31 12 21.6	81 59 05.1	826

NAYLOR QUADRANGLE.

Along Atlantic Coast Line R. R. southwest across center of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	30 56 10.4	83 00 21.0	.....
Public-road crossing, 725 feet northeast of milepost 140	30 55 59.4	83 00 49.2	2,690
Road crossing, 1,050 feet northeast of milepost 141	30 55 39.3	83 01 41.1	4,960
Alapaha River, center of, on Clinch-Lowndes county line	30 55 26.9	83 02 13.1	3,050
Public-road crossing	30 54 57.8	83 03 27.9	7,145
Naylor, 350 feet east of station, 70 feet southeast of center of main track, 2 feet from corner of Baptist Church; iron post stamped "Prim. Trav. Sta. No. 44, Mac. 1917"; azimuth of long tangent 65° 43′	30 54 28.2	83 04 42.2	7,134
Road crossing	30 54 22.7	83 04 58.4	1,518
Do	30 53 55.0	83 06 09.7	6,810
Road crossing, 1,450 feet northeast of milepost 147	30 53 32.0	83 07 08.8	5,650
Road crossing	30 53 16.9	83 07 47.6	3,710
Road crossing, 1,670 feet northeast of milepost 149	30 52 49.9	83 08 57.1	6,640
Bandy siding, east end of, at switch stand	30 52 30.7	83 09 46.5	4,730
Bandy siding, west end of, at switch stand	30 52 19.6	83 10 15.0	2,720
Road crossing, 150 feet east of switch stand, spur to sawmill	30 51 58.9	83 11 08.1	5,080
Road crossing, 1,350 feet southwest of milepost 152	30 51 33.1	83 12 14.4	6,340
Road crossing	30 51 28.6	83 12 26.0	1,110
Private-road crossing	30 51 09.6	83 13 14.8	4,665
Do	30 50 51.1	83 14 02.0	4,515
Road crossing	30 50 28.3	83 14 57.9	5,345

OAK PARK QUADRANGLE.

(By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Dewberry station, 675 feet north of road crossing, on Wadley Southern Ry	32 29 43.5	82 15 03.7	.....

OAK PARK QUADRANGLE—Continued.

Southeast along Georgia & Florida Ry.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Public-road crossing	32 29 49.6	82 19 59.7	.....
Wesley, crossing of Georgia & Florida and Central of Georgia railroads	32 29 01.0	82 19 45.1	4,934
Wesley, 2,800 feet east of railroad crossing, on line of tangent; U.S.C. & G. S. triangulation station Archer	32 28 51.67	82 19 23.10	2,800

OFFERMAN QUADRANGLE.

Along Atlantic Coast Line R. R. from Screven to Offerman. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Screven, road crossing	31 29 08.2	82 00 59.9	.....
Stone bridge, center of	31 28 24.3	82 01 49.1	6,150
Road crossing	31 27 42.8	82 02 35.7	5,820
Overhead road crossing	31 27 12.6	82 03 09.5	4,220
Satilla River, south end of trestle over	31 27 02.4	82 03 21.0	1,430
Road crossing	31 26 28.8	82 04 01.5	4,886
Center of trestle	31 25 53.0	82 04 46.6	5,330
Road crossing	31 25 12.4	82 05 37.7	6,030
Offerman, crossing of Atlantic Coast Line and Atlanta, Birmingham & Atlantic railroads	31 24 25.6	82 06 37.2	6,993

From Offerman southeast along Atlanta, Birmingham & Atlantic R. R.

Signpost painted "Station 1 mile," center of track opposite	31 23 50.6	82 05 51.6	5,304
Center of trestle	31 23 39.9	82 05 37.6	1,630
Do	31 23 15.6	82 05 05.8	3,690
Do	31 23 00.8	82 04 46.4	2,250
West abutment of trestle	31 21 53.6	82 03 18.5	10,210
Road crossing	31 21 40.9	82 03 01.9	1,930
Zirkle road crossing	31 21 22.5	82 02 37.8	2,800
Satilla River, west abutment of trestle over	31 21 07.1	82 02 10.7	2,820
Old sawmill, road crossing at	31 20 54.6	82 01 04.2	5,910

Southwest along Atlantic Coast Line and Atlanta, Birmingham & Atlantic railroads. (By Oscar Jones in 1917.)

Offerman, railroad crossing	31 24 25.6	82 06 37.2	.....
Road crossing	31 23 57.6	82 07 11.9	4,127
Patterson, road crossing	31 23 07.3	82 08 15.1	7,470
Road crossing	31 22 41.6	82 08 47.6	3,830
Do	31 21 36.5	82 10 09.4	9,670
Do	31 21 22.4	82 10 27.2	2,100
Do	31 21 03.8	82 10 50.5	2,760
Road crossing 500 feet north of Owens	31 20 36.1	82 11 25.3	4,110
Road crossing	31 19 25.7	82 12 53.7	10,460
Satilla River, south end of trestle over	31 18 52.1	82 13 35.9	4,990
Blackshears, road crossing at	31 18 13.7	82 14 24.2	5,710
Road crossing	31 17 55.7	82 14 46.8	2,670

Northwest along Atlanta, Birmingham & Atlantic R. R.

Station 300=0	31 24 25.6	82 06 37.2	.....
Road crossing	31 24 41.7	82 07 01.5	2,664
Do	31 25 06.4	82 08 04.7	6,018
Do	31 25 24.2	82 08 52.1	4,480
Do	31 25 30.5	82 09 16.1	2,178
Do	31 26 04.8	82 10 27.7	7,109
Do	31 26 36.2	82 11 35.6	6,677
Bristol, road crossing at	31 26 56.7	82 12 47.9	6,596
West end of trestle	31 27 20.6	82 13 33.1	4,602
Road crossing	31 27 31.2	82 13 59.5	2,527

OMECRON QUADRANGLE.

Along highways near north border of quadrangle. (By C. B. Kendall and C. W. Arnold in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Calvary Church, 150 feet north of, on Irwinton-Dublin road, 20 feet west to oak tree, 30 feet southeast to mail box, second-class crossroad	32 44 26.9	83 09 16.7	.....
Calvary Church, about 0.7 mile southeast of, 72 feet northeast to double chinaberry tree, 20 feet southeast to mail box, T-road northeast	32 43 57.5	83 08 51.0	3,699
Calvary Church, about 1 mile east of, at second-class road fork northwest, center of triangle	32 44 35.4	83 08 12.5	5,042
Outlaw Bridge, center of Big Sandy Creek at	32 44 47.6	83 07 22.2	4,471

OSSABAW ISLAND QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Burroughs station, near, intersection of Altantic Coast Line and Seaboard Air Line railroads	31 58 27.3	81 14 59.0	.....
Burroughs station, 540 feet northeast of, road crossing, 60 feet northwest of center of main track, 12 feet from fence line near section houses; iron post stamped "Prim. Trav. Sta. No. 19, 1917 Mac."	31 58 34.3	81 14 47.2	1,232
Burroughs station, switch stand at north end of siding	31 58 48.4	81 14 19.2	2,803
Road crossing	31 59 14.4	81 13 30.0	4,985

Magnetic declination for quadrangle, 0° 50′ E.

PEEPLES QUADRANGLE.

North along highways near west border of quadrangle. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Brier Creek, center of bridge over	32 48 35.6	81 29 04.4	.....
Road fork	32 49 28.0	81 29 19.1	5,450
Crossroads	32 50 34.3	81 29 24.8	6,716
Road fork	32 51 04.9	81 29 40.6	3,287

Along highways near south border of quadrangle.

Road fork	32 46 43.2	81 29 22.5	.....
Do	32 46 29.6	81 29 02.3	2,203
Center of road opposite gateway	32 46 26.6	81 28 36.8	2,196
Oak tree 10 inches in diameter standing about 5 feet north of road, tree blazed and marked "U. S."; nail in root	32 46 36.8	81 27 26.5	6,093
Pine tree on north side of road, in blaze on south side 5 feet above ground; nail	32 46 46.5	81 26 14.0	6,266
Brier Creek landing, opposite mouth of Brier Creek, 150 feet back from river bank, 520 feet N. 32° W. from dwelling house; U. S. Engineers b. m. post	32 46 56.7	81 25 54.7	1,947

Magnetic declination for east border of quadrangle, 0° 10′ E.

PEMBROKE QUADRANGLE.

Along highways near south border of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road east	32 00 00.0	81 40 35.4	.....
Willie, 110 feet southeast of railroad station, 70 feet west of store and post office, 15 feet west of road to Hinesville; iron post stamped "Prim. Trav. Sta. No. 30, 1917 Mac."; azimuth to west edge of chimney on west end of house of Saxton Duke, 400 feet distant across railroad track, 169° 50′	32 00 41.6	81 40 16.4	4,500
Second-class road crossing	32 00 56.3	81 39 31.2	4,173
Railroad crossing	32 01 12.5	81 38 08.7	7,290
T road southwest	32 00 56.8	81 37 54.0	2,027
Farm crossroad	32 00 26.1	81 37 22.6	4,116
Road forks, straight road southwest	32 00 02.0	81 36 57.5	3,256

Magnetic declination for south border of quadrangle, 0° 30′ E.

East along highways near north border of quadrangle. (By Oscar Jones in 1918.)

Center of Luke Swamp Branch	32 14 58.4	81 40 12.1	.....
Road fork	32 14 44.7	81 39 29.2	3,935
Crossroads	32 14 31.4	81 39 08.3	2,241
Center of road, opposite well on north side	32 14 08.4	81 38 12.4	5,339
Birds Bridge, 2 miles south of, over Black Creek, northeast corner of Y roads; iron post stamped "Prim. Trav. Sta. No. 17, 1918 J".	32 14 04.6	81 37 31.5	3,525
Road fork	32 14 06.3	81 36 56.7	2,999
Do	32 14 59.9	81 34 57.8	10,226
Center of bridge	32 13 54.1	81 34 11.7	4,003
Road fork	32 13 55.8	81 34 02.3	825
Do	32 13 55.6	81 33 33.4	2,484
Crossroads	32 13 47.8	81 32 58.6	3,083
Road fork, east of three mail boxes	32 13 10.9	81 31 49.8	6,990
Burned bridge over Black Creek, west end of	32 13 11.9	81 31 23.7	2,245
Road fork of Savannah-Dublin and Savannah-Statesboro roads; iron post stamped "Prim. Trav. Sta. No. 18 J"	32 13 10.0	81 30 17.3	5,707

Magnetic declination for north border of quadrangle, 0.4° E.

Southeast along highways near west border of quadrangle. (By Oscar Jones in 1918.)

Groveland, 300 feet east of depot; iron post stamped "Prim. Trav. Sta. No. 24 J, 1918"	32 08 37.6	81 44 45.8	.....
Road fork	32 08 01.5	81 44 49.1	3,653
Do	32 07 13.7	81 44 32.4	5,038
Do	32 06 37.1	81 43 56.3	4,827
Do	32 06 21.7	81 43 52.6	1,581
North end of Moody's bridge over Canooche River	32 05 57.2	81 43 44.5	2,570
Center of small bridge	32 05 24.4	81 44 10.1	3,975
Road fork, Sunbury road	32 05 02.2	81 44 19.3	2,372
Center of road, on Eram-Liberty county line, at church and school	32 04 41.8	81 43 50.0	3,260
Road fork	32 04 27.1	81 43 28.0	2,410
Do	32 03 52.7	81 42 56.1	4,431
Center of bridge	32 03 17.2	81 42 21.8	4,648
Crossroads	32 02 53.4	81 42 12.6	2,523
Crossroads, Groveland-Willie and Ludowici-Warnell roads at bridge	32 01 37.5	81 41 24.0	8,738
Road fork	32 01 22.5	81 41 00.8	2,508
Willie, "Prim. Trav. Sta. No. 30, Mac. 1917" (previously located)	32 00 41.6	81 40 16.4	5,629

Northwest along Seaboard Air Line Ry. through center of quadrangle.

Road crossing	32 07 31.4	81 30 11.9	.....
Do	32 07 38.4	81 31 06.6	4,760
Lanier, east of track, opposite semaphore	32 07 46.6	81 32 13.0	5,770
Road crossing	32 07 48.3	81 32 38.2	2,170
Do	32 07 55.2	81 34 15.4	8,380
Center of trestle	32 07 58.9	81 35 07.9	4,530
Road crossing at sawmill	32 08 00.7	81 35 33.6	2,220
Center of trestle	32 08 03.8	81 36 16.7	3,720
Do	32 08 06.2	81 36 52.2	3,060

PEMBROKE QUADRANGLE—Continued.

Northwest along Seaboard Air Line Ry. through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Pembroke, center of track, opposite semaphore	32 08 08.4	81 37 23.4	2,690
Road crossing	32 08 14.1	81 38 45.2	7,050
Do	32 08 15.8	81 39 08.9	2,050
Do	32 08 17.5	81 39 34.0	2,160
Do	32 08 20.0	81 40 09.5	3,060
Reka, road crossing	32 08 22.3	81 40 44.1	2,980
Road crossing	32 08 24.3	81 41 13.2	2,510
Do	32 08 28.4	81 42 11.3	5,010
Road crossing at sawmill	32 08 29.8	81 42 32.2	1,800
Road crossing	32,08 32.3	81 43 07.6	3,060
Do	32 08 35.0	81 43 48.0	3,480
Groveland, 300 feet east of depot; iron post stamped "Prim. Trav. Sta. No. 24, J 1918"	32 08 37.6	81 44 45.8	4,975

Magnetic declination along west edge of quadrangle, 0.7° E.

South along highways near east border of quadrangle. (By Oscar Jones in 1918.)

Road fork	32 02 46.7	81 30 12.0	.....
Northwest corner of crossroads, Pembroke-Clyde and Ellabelle-Butler Bridge roads; iron post stamped "Prim. Trav. Sta. No. 31, J 1918"	32 02 11.2	81 30 25.9	3,784
Road fork, opposite yard gate of house on south side of road	32 01 32.3	81 30 30.4	3,944
Road fork at house	32 00 59.3	81 31 07.9	4,637
Road fork at church	32 00 38.9	81 31 18.3	2,250
Road fork	32 00 20.1	81 31 31.9	2,230
East end of bridge	32 00 13.9	81 32 09.2	3,270
Road fork	32 00 11.7	81 33 05.0	4,824
Do	32 00 01.1	81 33 34.1	2,729
Crossroads	32 00 07.3	81 34 24.1	4,356
Road fork	32 00 00.9	81 35 00.5	3,204

Magnetic declination near east border of quadrangle, 0.3° E.

West along highways near south border of quadrangle. (By Oscar Jones in 1918.)

Crossroads at bridge	32 01 37.5	81 41 24.0	.....
Road fork	32 01 32.5	81 42 00.0	3,140
Crossroads	32 01 39.0	81 42 54.5	4,740
Do	32 00 50.5	81 43 40.7	6,315
Do	32 00 22.2	81 43 44.5	2,879
Center of most easterly of three bridges	32 00 29.9	81 44 14.0	2,651
Center of bridge	32 00 46.7	81 44 35.3	2,504

PERRYS MILLS QUADRANGLE.

West along highways near south border of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork northeast at branch	31 46 46.1	82 15 29.2	.....
Baxley, 5 miles east of, on north side of county road at forks to northeast, 15 feet north of east and west road, 15 feet west of north and south road; iron post not stamped, Prim. Trav. Sta. No. 39, 1918 H	31 46 25.8	82 16 22.3	5,020
Road fork	31 46 55.1	82 17 56.4	8,651
Stafford's Ferry road fork	31 47 10.2	82 18 34.7	3,637
Tillman, ferry road fork	31 47 19.1	82 19 55.4	7,020
T road north	31 47 15.2	82 20 11.2	1,420
Baxley, 20 feet west of station, north rail of main line of Southern Ry.	31 46 35.3	82 20 55.2	5,543
Baxley, about 0.5 mile south of, on right side of tracks of Southern Ry., 39 meters south of south switch signal of siding at Baxley, 6.245 meters from right rail; Prim. Trav. Sta. Baxley, marked by a triangulation station mark embedded in a block of concrete (U. S. C. & G. S. b. m. W_{12}). Elevation 201.994 feet	31 46 27.21	82 20 31.53	2,204

PERRYS MILLS QUADRANGLE—Continued.

Northwest along highways from Baxley, then east along north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Baxley, triangulation station of the U. S. C. & G. S. (previously described)	31 46 27.21	82 20 31.53	.....
Road fork	31 47 23.4	82 21 06.7	6,437
T road west at corner of field, 300 feet east of box house	31 48 06.8	82 21 34.7	5,001
T road, 200 feet southwest of painted house	31 48 31.3	82 21 44.6	2,622
Roads fork west at southeast corner of field	31 49 41.2	82 22 44.5	8,758
Middle of bridge	31 50 09.2	82 23 03.0	3,234
Opposite house on east side of road, three mail boxes on west side.	31 50 52.9	82 24 01.9	6,735
Second-class crossroads	31 51 30.3	82 24 34.3	4,697
Crossroads, 30 feet northeast of mail box	31 52 04.5	82 24 38.4	3,476
Crossroads, 30 feet northwest of two mail boxes	31 52 29.6	82 24 49.0	2,700
Road fork, 400 feet north of white house	31 53 46.6	82 24 57.2	7,809
Crossroads at southeast corner of field	31 54 29.5	82 25 30.5	5,197
Road forks	31 54 55.8	82 25 53.4	3,306
Road forks at sign painted "Baxley 13 miles"	31 55 49.1	82 26 14.6	5,687
Road forks, 20 feet west of Goodrich tire sign	31 56 16.3	82 26 38.2	3,422
North end of bridge	31 57 06.8	82 26 46.4	5,152
Mann's ferry, 0.75 mile southeast of, at forks of road, 20 feet southeast to Goodrich sign; iron post stamped "Prim. Trav. Sta. No. 44, 1918 H"	31 57 22.4	82 27 19.4	3,245
Mann's ferry, north landing	31 57 58.7	82 27 42.6	4,175
T road south at house, 30 feet northwest of ferry sign	31 59 04.0	82 27 56.5	6,702
Road fork northeast	31 59 04.6	82 27 38.1	1,589
Crossroad at house	31 59 01.5	82 27 00.8	3,231
Road forks, 100 feet northeast of gin	31 59 13.4	82 25 40.5	7,033
Road forks, 400 feet northeast of gin	31 59 12.8	82 25 35.4	459
Hub, 8 feet south and 66 feet east of gate to old house, 60 feet northeast of big corner post	31 58 47.1	82 24 47.0	4,906
West end of bridge	31 58 31.4	82 24 14.9	3,192
T road north, 100 feet northeast of house	31 58 40.3	82 23 12.7	5,451
Forks of river road and new road	31 58 38.3	82 22 45.4	2,340
Road fork	31 58 31.2	82 22 21.8	2,160
R. E. S. Mann's store, 40 feet west of, 3 feet north of plank fence on south side of road; iron post stamped "Prim. Trav. Sta. No. 45, 1918 H"	31 58 19.0	82 21 49.8	3,017
T road north to Vidalia	31 58 10.5	82 21 23.3	2,443
T road north at old store	31 58 16.7	82 20 33.5	4,341
West end of long wooden bridge	31 58 17.9	82 19 24.0	5,987
Second-class road north and second-class road through gate to south	31 58 23.7	82 18 00.2	7,251
Middle of bridge	31 58 21.3	82 17 40.1	1,750
Junction of River road and Savannah road	31 58 33.1	82 17 17.1	2,313
Crossroads, church 150 feet southeast	31 58 53.6	82 16 40.0	3,800
Opposite old store	31 59 18.9	82 16 13.9	3,413
Second-class road south at branch	31 59 31.2	82 15 19.2	1,775
Crossroads, two mail boxes in northwest corner	31 59 37.1	82 15 40.3	1,750

Northeast along highways.

Tillman Ferry, road fork	31 47 19.1	82 19 55.4	.....
Road fork north	31 47 49.2	82 19 31.2	3,684
Crossroads at house	31 48 13.3	82 18 58.1	3,756
Middle of bridge	31 48 51.5	82 18 20.4	5,038
Road fork east at corner of fence	31 49 20.1	82 17 58.9	3,438
Second-class road crossing, two mail boxes	31 49 39.6	82 17 41.7	2,470
Road west at south end of long bridge	31 50 07.0	82 17 33.2	2,858
Second-class road crossing	31 50 26.2	82 17 17.0	2,390
Second-class road northwest and east	31 50 59.4	82 16 43.2	4,445
Road northwest at north end of bridge	31 51 19.4	82 16 03.5	3,971
Elliott postoffice, entrance to	31 51 44.1	82 15 45.0	2,966
Road fork to east	31 51 51.1	82 15 05.7	3,468

Magnetic declination near south border of quadrangle, 1° 22′ E.; near north border of quadrangle, 1° 17′ E.; in northeast part of quadrangle, 1° 04′ E.

REGISTER QUADRANGLE.

South along railroads and highways near east border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Statesboro, Prim. Trav. Sta. No. 13 (previously located)	32 26 39.7	81 46 54.8	.....
Crossing of Central of Georgia and Midland railroads, 50 feet northeast of road crossing	32 26 20.6	81 47 04.4	2,103
Road fork	32 25 41.7	81 46 47.2	4,198
Road fork at State Agricultural School	32 25 32.5	81 46 50.9	984
Road fork	32 25 14.1	81 46 33.9	2,366
Crossroads at three mail boxes	32 24 24.2	81 46 09.1	5,468
Center of bridge	32 24 06.8	81 45 59.4	2,029
Crossroads near church	32 23 43.3	81 45 33.8	3,116
Road fork	32 22 58.2	81 45 35.6	4,557
Do	32 22 22.2	81 45 40.1	3,658
Do	32 21 43.7	81 46 05.8	4,478
Crossing of old railroad grade	32 20 54.9	81 46 17.1	5,030
Road fork	32 20 42.8	81 46 17.5	1,220
Do	32 20 22.8	81 46 25.6	2,139
Crossroads	32 19 22.1	81 46 34.1	6,183
Do	32 18 38.2	81 46 34.4	4,438
Do	32 18 08.3	81 46 24.1	3,146
Do	32 17 50.1	81 46 20.0	1,870
Crossroads, 150 feet southwest of M. L. Smith's residence; iron post stamped "Prim. Trav. Sta. No. 16, 1918 J"; azimuth to smoke stack on gin, 207° 15′ 15″	32 17 08.1	81 46 44.0	4,724
Center of bridge	32 16 55.4	81 46 09.9	3,198
Crossroads	32 16 54.7	81 46 00.0	855
Do	32 16 58.7	81 45 28.8	2,708

Northwest along Savannah & Statesboro Ry. near east border of quadrangle.

Road crossing	32 25 29.6	81 45 13.0	.....
Do	32 25 58.1	81 46 13.0	5,890
Do	32 26 18.4	81 46 51.2	3,865
Prim. Trav. Sta. No. 13 J 1918 (previously described)	32 26 39.7	81 46 54.8	2,182

Northeast along Central of Georgia Ry.

Statesboro, opposite semaphore station of Central of Georgia Ry., center of track	32 26 56.6	81 46 49.6	1,770
Crossing of Midland Ry	32 27 31.1	81 46 44.5	3,517
Road crossing	32 28 03.3	81 46 32.8	3,405
Do	32 28 31.0	81 46 07.3	3,550
Do	32 28 46.2	81 45 53.4	1,950
North end of trestle	32 29 07.9	81 45 40.1	2,476
Road crossing	32 29 50.7	81 45 26.1	4,482

Southwest along Central of Georgia Ry. (By Oscar Jones in 1918.)

Statesboro, crossing of Central of Georgia and Midland railroads, 50 feet east of road crossing	32 26 20.6	81 47 04.4	.....
Road crossing	32 25 22.8	81 47 54.9	7,270
Do	32 25 07.2	81 48 08.5	1,960
Do	32 24 37.8	81 48 34.1	3,690
Do	32 24 16.0	81 48 53.2	2,740
Do	32 23 52.2	81 49 19.6	3,306
Jimps station, road crossing	32 23 09.2	81 50 07.4	5,975
East end of trestle	32 22 18.3	81 51 25.4	8,437
Road crossing	32 22 07.2	81 52 03.0	3,420
Do	32 21 56.5	81 52 39.5	3,311
Register, 150 feet west of station, 5 feet north of milepost 876; iron post stamped "Prim. Trav. Sta. No. 14, 1918 J"	32 21 56.4	81 53 05.2	2,212
Road crossing	32 22 20.1	81 54 03.9	5,576
Do	32 22 31.7	81 54 31.8	2,670
Do	32 22 51.8	81 55 20.2	4,620
Chandler, road crossing	32 23 02.1	81 55 44.8	2,360
Road crossing	32 23 16.5	81 56 23.4	3,613
Pulaski, road crossing	32 23 24.2	81 57 24.6	5,310
Road crossing	32 23 31.9	81 58 25.8	5,310
Parish, road crossing	32 23 38.7	81 59 21.0	4,790

REGISTER QUADRANGLE—Continued.

Northwest along railroads and highways in northeast corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossing of Midland Ry. and Statesboro-Garfield road	32 27 34.2	81 47 13.0	
Crossing of Midland and Savannah & Statesboro railroads, center of track at switch stand	32 27 13.2	81 47 31.8	2,667
Road crossing	32 27 41.6	81 47 57.6	4,110
Do	32 28 00.1	81 48 07.5	1,526
Do	32 28 21.1	81 48 47.9	4,066
Road crossing, Statesboro and Postal road	32 28 40.2	81 48 59.0	2,149
Road crossing	32 29 31.9	81 49 44.6	6,528
Colfax, road crossing	32 29 58.1	81 50 24.1	4,293
Crossroads	32 29 53.1	81 54 37.0	

Southeast and east along highways in south part of quadrangle.

Creek crossing	32 19 52.4	81 59 37.6	
Crossroads	32 19 40.2	81 59 29.6	1,415
Do	32 19 03.3	81 58 56.2	4,705
Road fork	32 18 52.0	81 58 37.0	2,019
Excelsior crossroads, south front of church and school	32 18 49.4	81 57 57.8	3,375
Road fork	32 18 06.5	81 58 03.0	4,360
Do	32 17 11.6	81 57 57.8	5,572
Center of bridge over Tenmile Creek	32 16 36.5	81 57 45.9	3,697
Road fork, in southeast corner of, 0.5 mile north of Kennedy's bridge over Canoochee River; iron post stamped "Prim. Trav. Sta. No. 22, 1918 J"	32 16 26.5	81 57 42.7	1,049
Crossing of East Georgia Ry	32 16 09.5	81 56 17.6	7,506
Crossroads	32 16 16.7	81 55 43.4	3,019
Road fork	32 15 57.5	81 55 02.8	3,991
Crossroads	32 15 48.7	81 54 51.6	1,312
Do	32 15 24.8	81 54 25.3	3,302
Road fork	32 15 14.2	81 53 32.3	4,670
Do	32 15 07.6	81 53 07.5	2,233
Crossroads (in Daisy quadrangle)	32 14 59.8	81 52 13.4	4,716
Center of bridge over Scotts Creek, Bulloch-Evans county line	32 15 28.8	81 51 45.6	3,780
Crossroads	32 15 55.7	81 51 15.9	3,724
Road fork	32 16 33.4	81 50 38.8	4,968
Crossroads	32 16 55.1	81 50 04.8	3,645
Center of bridge over Kirby Branch at road fork	32 17 33.2	81 49 23.1	5,328
Center of bridge over Lotts Creek	32 17 51.4	81 48 53.7	3,068
Do	32 17 46.1	81 48 25.8	2,455
Crossroads	32 17 55.2	81 47 34.6	4,489
Crossroads, 70 feet north of mail box	32 17 27.7	81 47 39.1	2,809
Prim. Trav. Sta. No. 16, 1918 J (previously described)	32 17 08.1	81 46 44.0	5,121

South along highway near west border of quadrangle.

Crossroads	32 28 16.7	81 59 43.4	
Do	32 27 57.1	81 59 53.5	2,160

Magnetic declination for south edge of quadrangle, 0.5° E.

South along highways near east border of quadrangle. (By Oscar Jones in 1917.)

Crossroads	32 16 58.7	81 45 28.8	
Road fork	32 16 17.3	81 45 35.3	4,213
Nevilles, railroad crossing	32 15 54.8	81 45 39.6	2,300
Road fork	32 15 03.5	81 46 05.9	5,654

South along highways near west border of quadrangle.

Kennedy, bridge over Canoochee River, 0.5 mile north of; iron post stamped "Prim. Trav. Sta. No. 22, J 1918"	32 16 26.5	81 57 42.7	
Kennedy, bridge over Canoochee River, north end of	32 16 04.6	81 58 03.0	2,817
Road fork	32 16 01.4	81 58 25.8	1,984
Crossroads	32 15 32.0	81 58 42.7	3,298
Do	32 15 13.4	81 58 54.6	2,152

Magnetic declination for west border of quadrangle, 0.6° E.

REGISTER QUADRANGLE—Continued.

(By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Prim. Trav. Sta. No. 22 J (previously described)	32 16 26.5	81 57 42.7	.....
Road fork	32 16 03.6	81 58 58.2	6,882
Do	32 16 11.9	81 59 33.0	3,106

REIDSVILLE QUADRANGLE.

South along east border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads	31 57 19.3	82 00 01.6	.....
Road fork	31 57 09.4	82 00 24.5	2,215
Crossroads	31 56 48.6	82 00 45.2	2,758
Tyson, crossroads	31 56 19.8	82 01 15.1	3,893
Tyson, 1 mile southeast of, 3 miles west of Medlock, in southeast corner of road at crossroads; iron post stamped "Prim. Trav. Sta. No. 29, J 1918"	31 55 42.3	82 00 24.7	5,759
Road fork	31 54 55.6	82 00 32.7	4,773
T road north	31 53 59.3	82 00 40.7	5,726
Crossroads	31 53 16.8	82 00 19.0	4,682
West end of bridge at mill, 1,843 feet east of Prim. Trav. Sta. No. 29	31 55 41.4	82 00 03.3	.....

Magnetic declination for east border of quadrangle, 0.6° E.

ROBBINS QUADRANGLE.

Along highways near west border of quadrangle. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Beaver Dam Creek, center of bridge over	33 07 21.8	81 44 19.1	.....
Intersection of Girard and Griffins Landing road with old Savannah and Augusta road, 30 feet east of crossing; iron post stamped "Prim. Trav. Sta. No. 125, 1918 Mac."	33 05 52.7	81 42 29.6	12,958
Road fork	33 04 53.6	81 43 01.4	6,558
Do	33 03 53.9	81 43 17.7	6,190
Spur line unchecked, road fork	33 06 40.3	81 42 04.9	.....
Griffins Landing, 35 feet from river bank and 25 feet west of warehouse, in notch cut in root of cypress tree west side; nail	33 06 55.3	81 42 15.7	1,772
Griffins Landing, about 900 feet below; U. S. Engineers b. m. post	33 06 55.7	81 42 03.9	998

Along highways near south border of quadrangle.

Crossing on Burke-Screven county line	33 01 28.1	81 34 38.3	.....
Stony Bluff ferry, 2 miles west of, 25 feet west of crossroads, 100 feet west of store; iron post stamped "Prim. Trav. Sta. No. 114, 1918 Mac."; azimuth to nail in water-oak tree on south side of road, distant 436 feet, 57° 17′ 15″	33 01 33.2	81 34 40.9	568
Road fork	33 01 15.1	81 35 35.2	4,969
Crossroad, at top of hill	33 01 11.5	81 36 44.6	5,924
Road fork	33 01 05.2	81 37 44.9	5,158
Do	33 01 04.8	81 38 38.8	4,590
Angle in road	33 01 20.0	81 39 38.7	5,327
Crossroads	33 01 44.0	81 40 41.0	5,834
Do	33 02 04.8	81 42 00.5	7,089
Girard, near south end of village, 120 feet S. 25° E. from corner of brick bank building; iron post stamped "Prim. Trav. Sta. No. 116, 1918 Mac."; azimuth to steeple of Methodist church, 50° 57′ 30″	33 02 23.9	81 42 42.6	4,072

ROBBINS QUADRANGLE—Continued.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork	33 01 42.4	81 43 29.9	5,811
Do	33 01 20.5	81 44 02.9	3,575

Magnetic declination for west border of quadrangle, 1° 10′ E.; for south border of quadrangle, 0° 30′ E.

ROCKY FORD QUADRANGLE.

West along railroads and highways near south border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	32 30 17.2	81 51 06.3	.....
Do	32 30 28.7	81 51 31.7	2,480
Do	32 30 34.1	81 52 29.1	4,939
Do	32 30 50.4	81 52 54.8	2,749
Blands Spur station, 300 feet west of, 50 feet northeast of crossroads; iron post stamped "Prim. Trav. Sta. No. 19, J 1918"	32 30 56.3	81 53 31.5	3,195
Road fork	32 30 29.9	81 54 04.2	3,874
Do	32 30 09.9	81 54 23.3	2,592
Crossroads (in Register quadrangle)	32 29 53.1	81 54 37.0	2,070
Creek crossing	32 30 11.4	81 55 08.2	3,248
Road fork	32 30 15.7	81 55 54.9	3,940
Crossroads	32 30 24.6	81 56 51.6	5,028
Do	32 30 28.1	81 57 44.6	4,549
Center of bridge at mill	32 30 43.4	81 58 19.4	3,365
Crossroads	32 30 59.4	81 58 49.7	3,053
Do	32 31 07.3	81 59 36.2	4,063

Magnetic declination for south border of quadrangle, 0.5° E.; for quadrangle, 0.4° E.

On Central of Georgia Ry. in southeast corner of quadrangle. (By Oscar Jones in 1918.)

Clito, center of track opposite center of station	32 30 47.1	81 45 13.1	.....
Road crossing	32 31 04.5	81 45 09.2	1,792

Along highway northwest through center of quadrangle. (By E. L. McNair in 1918.)

Angle in road near second-class road southwest	32 35 15.8	81 58 32.7	.....
Road fork, 200 feet north of bridge	32 34 35.8	81 57 56.4	5,091
Crossroad	32 34 00.1	81 56 47.3	6,931
Road fork	32 33 35.3	81 56 04.2	4,467
Crossroad at schoolhouse	32 33 32.4	81 54 54.9	5,936
Crossroads	32 33 56.0	81 54 28.9	3,257
Rocky Ford, 4.5 miles southeast of, about 2 miles northeast of Bradwells schoolhouse, 10 feet north and 15 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 127, 1918 Mac."; azimuth to north edge of north chimney on house of Joe Parish, about 1,000 feet distant, 279° 05′ 30″	32 34 46.6	81 53 27.2	7,351
Road fork	32 35 23.1	81 52 50.8	4,826
Road fork near gin	32 36 31.9	81 51 34.5	9,540
Road fork at Finch's store	32 37 25.4	81 51 37.7	3,410
Center of bridge	32 37 36.4	81 51 19.1	1,936
Crossroads	32 38 18.4	81 50 39.1	5,451
Center of iron truss span bridge across Ogeechee River	32 39 07.4	81 50 10.5	5,333

ROCKY FORD QUADRANGLE—Continued.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road east	32 44 44.1	81 59 48.1	.....
Road fork	32 43 57.3	81 59 39.2	4,772
Center of bridge	32 43 34.0	81 59 45.1	2,419
Crossroads	32 41 16.5	81 59 57.1	.....
Center of bridge	32 40 43.2	81 59 41.4	3,610
Crossroads	32 40 17.5	81 59 35.8	2,640
Center of bridge	32 39 42.1	81 59 35.6	3,564
Road fork	32 38 23.7	81 59 53.9	8,070
Crossroads	32 35 47.0	81 59 16.1	.....
Road fork	32 34 23.7	81 59 25.1	8,450
Crossing of Midland Ry., about 600 feet west of Aaron station	32 34 06.2	81 59 42.0	2,281
Center of bridge	32 33 48.0	81 59 51.4	2,013
Crossroads	32 32 45.8	81 59 53.7	6,291
Do	32 32 14.0	81 59 47.7	3,265
T road east	32 32 35.9	81 59 44.9	3,856

Along Central of Georgia Ry. from Millen southeast.

Milepost 73, road crossing 1,250 feet northwest of, 150 feet south to cabin	32 44 46.2	81 53 00.6	.....
Milepost 73, road crossing 2,100 feet southeast of	32 44 22.4	81 52 33.9	3,317
Milepost 72, road crossing 1,300 feet east of	32 43 39.2	81 52 24.7	4,441
Scarboro, road crossing at station	32 42 44.9	81 52 30.9	5,515
Jenkins-Screven county line, crossing of	32 41 36.3	81 51 46.9	7,886
Milepost 68, road crossing 800 feet northwest of, 200 feet southwest to house	32 40 58.4	81 51 05.1	5,238
Milepost 67, railroad track opposite	32 40 14.7	81 50 17.0	6,030
Rocky Ford, road crossing at station	32 39 49.0	81 49 47.8	3,600
Milepost 65, railroad track opposite	32 39 10.7	81 48 39.9	6,986
Milepost 64, railroad track opposite	32 38 42.4	81 47 48.2	5,258
Milepost 63, railroad track opposite	32 38 01.4	81 47 11.7	5,195
Milepost 62, railroad track opposite	32 37 31.0	81 46 21.9	5,254
Ogeechee, road crossing at station	32 37 11.1	81 45 58.0	2,865

Magnetic declination for center of quadrangle, 0° 30′ E.; for west border of quadrangle, 0° 45′ E.

ROSIER QUADRANGLE.

Along Georgia & Florida R. R. near west border of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 206, road crossing 750 feet north of	32 59 10.2	82 14 38.7	.....
Rosier, 700 feet northwest of station, on west side of railroad, 20 feet north of wagon road; iron post stamped "Prim. Trav. Sta. No. 8, 1918 H"; 900 feet south of post is point on east rail, azimuth, 349° 33′ 30″; 1,080 feet north of post is point on east rail, azimuth, 170° 49′ 45″	32 58 37.2	82 14 32.1	3,385
Milepost 205, road crossing 2,700 feet south of	32 57 44.6	82 14 21.3	5,400
Milepost 204, road crossing 1,450 feet south of, 300 feet southeast to cabin	32 57 05.4	82 14 16.0	3,985
Milepost 203, road crossing 800 feet south of	32 56 19.9	82 14 22.2	4,630
McGruder, road crossing 300 feet south of	32 55 13.4	82 14 31.4	6,770
Milepost 200, railroad opposite	32 53 52.0	82 14 30.9	8,228
Lawsons crossing, road crossing at	32 53 09.8	82 14 27.2	4,283
Milepost 198, road crossing 600 feet north of	32 52 14.6	82 14 34.8	5,615
Milepost 197, road crossing 500 feet south of	32 51 11.7	82 14 24.7	6,414
Milepost 196, road crossing 1,000 feet north of, at house	32 50 34.6	82 14 17.3	3,810
Midville, road crossing 1 mile north of	32 50 05.0	82 14 11.7	3,028
Midville, in southwest part of, 20 feet northwest of crossing of Georgia & Florida and Central of Georgia railroads; iron post stamped "Prim. Trav. Sta. No. 9, 1918 H"; 1,260 feet north of post is point on east rail, azimuth, 195° 44′ 45″; 631 feet east of post is point on north rail of Central of Georgia Ry. azimuth, 277° 38′ 45″	32 49 04.0	82 14 24.6	6,263

ROSIER QUADRANGLE—Continued.

Along Central of Georgia Ry. in south part of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Midville, 0.75 mile east of, second-class road crossing	32 49 01.6	82 13 28.7	4,774
Midville, 1.75 miles west of, second-class road crossing, 60 feet south to gate	32 48 58.5	82 12 22.0	5,691
Milepost 93, railroad track opposite	32 49 06.6	82 10 59.2	7,115
Milepost 92, railroad track opposite	32 49 06.9	82 09 57.4	5,272
Burke-Jenkins county line, crossing of	32 49 10.2	82 08 47.9	5,940
Herndon, road crossing east of station	32 49 13.7	82 07 46.0	5,292
Milepost 89, railroad track opposite	32 49 16.6	82 06 51.4	4,668
Milepost 88, railroad track opposite	32 49 16.8	82 05 47.6	5,444
Rogers, road crossing at	32 49 10.7	82 04 28.8	6,760
Milepost 85, railroad track opposite	32 49 02.4	82 02 44.6	8,931
Cushingville, road crossing 1 mile west of	32 48 44.6	82 01 33.5	6,326
Cushingville, road crossing at station	32 48 27.8	82 00 35.7	5,220
Along highways near west border of quadrangle.			
T road, 300 feet east of this point is T road north at store	32 47 03.4	82 14 47.5	.....
Midville, 1 mile south of, three corners, south of bridges	32 48 23.1	82 14 21.8	8,354
Midville, iron post No. 9, H 1918	32 49 04.0	82 14 24.6	4,135
Along highways near south border of quadrangle.			
Hinco schoolhouse, forks at, 20 feet northeast to two mail boxes	32 45 18.3	82 10 04.4	.....
House north of road, entrance to, 20 feet northeast to mail box	32 45 52.4	82 09 24.4	4,840
House south of road, entrance to	32 46 28.7	82 08 33.5	5,690
Crossroads, 40 feet northeast to lamp	32 47 07.2	82 08 08.9	4,416
Herndon, about 3 miles southeast of, 40 feet northwest of crossroads at church; iron post stamped "Prim. Trav. Sta. No. 32, 1918 H"; 968 feet southwest is nail in hub on north side of road, azimuth, 70° 00′ 00″	32 47 19.4	82 07 17.0	4,598
Crossroads, 30 feet northwest to three mail boxes	32 47 19.2	82 06 29.7	4,040
Yellow store building, road opposite	32 47 22.1	82 05 35.0	4,676
Store, crossroads at	32 47 19.9	82 04 53.5	3,544
House on south side of road, sawmill entrance to	32 47 16.1	82 03 33.1	6,878
Crossroads, 20 feet northeast to mail box	32 46 41.6	82 02 13.4	7,647
Road north at mail box	33 45 53.6	82 01 17.4	6,803
Crossroads	32 45 39.9	82 00 21.1	5,000
Along highways near north border of quadrangle.			
Crossroads, 40 feet southwest to two mail boxes	32 54 24.7	82 00 32.2	.....
Buckhead Church, three corners northeast of	32 54 10.2	82 01 21.8	4,470
Forks of road	32 53 23.6	82 01 42.9	5,057
Crossroads, 15 feet southwest to two mail boxes	32 53 46.9	82 03 12.8	8,008
Negro church, crossroad 100 feet northeast of	32 54 14.5	82 03 48.3	4,113
Burke-Jenkins county line, crossroads on	32 54 59.0	82 04 54.0	7,169
Gin, crossroads at	32 56 05.9	82 06 31.9	10,740
Along highways near west border of quadrangle.			
Forks of road, 100 feet west to cabin	32 56 36.9	82 07 21.1	5,219
Crossroads, 30 feet southwest to three mail boxes	32 57 04.2	82 07 54.5	3,971
T road southwest	32 57 58.9	82 09 57.0	11,806
Crossroads	32 58 06.5	82 11 42.2	8,994
T road, 50 feet northeast to cabin	32 58 13.0	82 12 44.6	5,350
Second-class crossroad, 30 feet northwest to big tree	32 58 29.0	82 13 47.3	5,572
Iron post No. 8, H 1918	32 58 37.2	82 14 32.1	3,895

Magnetic declination for north border of quadrangle, 0° 45′ E.; for west border of quadrangle, 0° 52′ E.; for south border of quadrangle, 0° 51′ E.

ST. MARYS QUADRANGLE.

Along Atlantic, Waycross & Northern R. R. (By J. B. Leavitt in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Burrells Creek, center of trestle over	30 44 58.6	81 34 58.8	
Trestle elevation T. R. 9.2, near end of long tangent, center of	30 44 23.5	81 33 40.0	7,741
T. b. m. 10 feet from center of track, in old stump, elevation on pine tree 13.5 feet, center of track opposite	30 44 07.6	81 33 27.1	1,962
Second-class road crossing, 30 feet northwest to pine tree marked "10.7 feet"	30 43 32.4	81 33 32.8	3,590
St. Mary's, Riverview Hotel, two blocks north of, at intersection of Osborne Street and east-west street, drill hole in sandstone	30 43 22.7	81 32 53.5	3,575
Point Peter triangulation station, on slightly elevated ground, in a large open field formerly cultivated and separated on the southeast from Cumberland Sound and St. Marys River by extensive marshes; station is marked by intersection of two lines cut in top of a granite monument surrounded by a mass of concrete which extends from 2 inches below surface of ground to a depth of 14 inches	30 43 37.74	81 30 43.87	11,414

From St. Marys northwest along highways. (By J. B. Leavitt in 1917.)

St. Marys, northwest corner of courthouse yard, 1.5 feet south of fence; iron post stamped "Prim. Trav. Sta. No. 24 K"	30 43 33.4	81 32 50.2	
St. Marys, end of Osborne Street, where shell road turns west	30 44 14.7	81 32 41.4	4,249
T road north, where line leaves shell road and turns due north, 2,100 feet south of T road west	30 44 31.2	81 33 13.4	3,258
T. b. m. 15.8, center of road opposite	30 44 58.3	81 33 09.2	2,760

SANDERSVILLE QUADRANGLE.

Along highways near west border of quadrangle. (By C. B. Kendall and C. W. Arnold in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Washington-Wilkinson county line crossing	32 50 26.6	82 58 47.5	
Gardner station, 30 feet west of, center of tract	32 50 58.9	82 58 06.5	4,784
Gardner station, about 1 mile east of, 450 feet northeast of Oconee station, 70 feet northwest of road crossing railroad, in center of triangle at road forks; iron post stamped "Prim. Trav. Sta. No. 5, 1916"	32 51 25.6	82 57 07.8	5,690
Oconee station, 0.6 mile northeast of, south point of triangle at road forks	32 51 55.9	82 56 52.5	3,324
Buffalo Creek, southeast end of south wagon bridge over	32 53 20.4	82 57 41.5	9,508
Road forks, center of road east	32 54 37.7	82 58 55.3	10,032
Road forks, center of, at farm road east	32 55 10.7	82 59 57.3	6,251
Road forks, road west	32 50 11.2	82 56 33.4	
A. T. Cook's mail box, second-class road east at	32 49 42.6	82 55 55.4	4,337
Road forks, road east	32 48 59.6	82 55 00.1	6,407
Milepost 16	32 48 14.3	82 55 58.0	6,745
Creek, center of	32 47 50.0	82 56 18.5	3,013
Milepost 17	32 47 35.3	82 56 41.1	2,435
Ball's ferry, east bank of Oconee River	32 47 13.3	82 57 24.6	4,332

Magnetic declination for west border of quadrangle, 1° 20′ E.

Along Central of Georgia Ry. (By E. L. McNair in 1918.)

Road crossing	32 56 44.8	82 45 25.0	
Do	32 56 45.0	82 46 10.5	3,886
Second-class road crossing	32 56 45.1	82 46 52.7	3,596
Milepost A160	32 56 32.7	82 47 54.2	5,398
Tennille station, 0.3 mile east of, within Y formed by tracks of Wrightsville & Tennille R. R., 60 feet north of public road, 500 feet southeast of large concrete water tower, 35 feet west of a well; iron post stamped "Prim. Trav. Sta. No. 139, 1918 Mac."; azimuth to rod on top of concrete water tower, 117° 31′ 00″; to church steeple, 96° 59′ 30′; to top of steel water tower, 87° 59′ 30″	32 56 13.4	82 48 26.2	3,358
Second-class road crossing	32 55 56.7	82 49 06.7	3,840
Road crossing	32 55 17.5	82 50 22.7	7,598
Milepost A156	32 54 17.4	82 50 43.0	6,313
Road crossing, over railroad	32 53 45.6	82 50 54.3	3,356

SANDERSVILLE QUADRANGLE—Continued.

Along Central of Georgia Ry. (By E. L. McNair in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost A154	32 53 34.4	82 52 09.6	6,520
Second-class road crossing	32 53 05.8	82 52 52.2	4,646
Hazzard siding, road crossing at west end of	32 52 16.1	82 53 24.6	5,734
Road crossing	32 51 32.8	82 54 22.5	6,600
Milepost A150	32 51 37.5	82 55 04.9	3,650
Milepost A149	32 51 20.4	82 56 00.6	5,061
Oconee, 450 feet northeast of station, 70 feet northwest of railroad and road crossing, in center of triangle at road forks; iron post stamped "Prim. Trav. Sta. No. 5, 1916"	32 51 25.86	82 57 07.8	5,761
Southeast along Wrightsville & Tennille R. R.			
Tennille station, about 0.33 mile east of, within Y formed by railroad tracks, 60 feet north of public road, about 500 feet southeast of large concrete water tower, 35 feet west of a well; iron post stamped "Prim. Trav. Sta. No. 139, 1918 Mac"	32 56 13.4	82 48 26.2	.....
Public-road crossing	32 55 32.7	82 47 54.0	4,943
Intersection of railway tangents, angle about 18°	32 55 09.4	82 47 36.3	2,801
Road crossing	32 54 25.1	82 46 55.5	5,672
Lindsey's flag station, public-road crossing	32 53 45.3	82 46 22.3	4,925
Public-road crossing	32 52 52.0	82 45 47.2	6,160
Peacock's flag station, road crossing	32 52 14.7	82 45 21.3	4,370

Magnetic declination for southeast part of quadrangle, 1° 11′ E.

Near Sandersville.

Angle 42° in road, center line both ways, point about 5 feet southeast of persimmon tree, in fence line	32 59 31.6	82 49 38.8	.....
Sandersville, at northeast corner of cemetery, street corner	32 58 57.2	82 48 51.2	5,346
Sandersville, station of Augusta Southern R. R., about 325 feet southwest of, on Baptist Church grounds, in line with south face of brick church building, 36 feet east of southeast corner of building, 19 feet west of stone curbing, set flush with surface of ground; iron post stamped "Prim. Trav. Sta. No. 147, 1918 Mac"	32 58 51.04	82 48 41.58	1,034

Magnetic declination near south border of quadrangle, 1° 26′ E.

North along roads.

T road east, just north of county line	32 45 54.9	82 55 50.5	.....
Forks of road	32 46 51.0	82 55 36.1	5,799
Angle in road of 17°, center line both ways, 12 feet east of center of road	32 47 48.0	82 54 51.9	6,894
Crossroad at schoolhouse, 2.5 miles east of Ball's ferry	32 48 37.1	82 54 46.47	4,967
Forks of road	32 48 59.7	82 55 00.4	2,464
Do	32 49 47.5	82 56 02.1	7,153
Center of road, opposite milestone	32 50 40.9	82 56 51.6	6,859
Oconee, iron post stamped "No. 5, 1916" (previously described)	32 51 25.6	82 57 07.8	4,730

Magnetic declination for north part of quadrangle, 1° 15′ E.

North along highways.

Wrightsville, 8.5 miles west of, 115 feet south 48 feet west from Tarbutton's store, 40 feet north of center of road leading west to Kittrell, 60 feet north of corner fence post, 15 feet west of center of north and south road; iron post stamped "Prim. Trav. Sta. No. 145, 1918 Mac."	32 44 28.7	82 51 19.1	.....
Forks of road, 35 feet north of small stream	32 45 13.3	82 51 22.8	4,513
Forks of road, road east	32 45 38.4	82 51 31.3	2,639
Forks of road	32 46 12.1	82 51 43.7	3,565
Creek crossing, bridge over	32 47 27.8	82 51 13.6	8,068
Forks of road, in front of negro church	32 47 59.9	82 51 02.8	3,369
Center of road, at milestone 13	32 48 53.8	82 50 51.0	5,545
T road east	32 49 48.0	82 50 46.6	5,483
Forks of road	32 50 20.9	82 50 41.1	3,359
Crossroads, at Slade's store	32 51 25.2	82 50 59.5	6,687
Crossroads	32 51 56.5	82 50 49.1	3,278
Forks of roads	32 52 33.1	82 50 50.8	3,704
T road west	32 53 19.2	82 50 56.9	4,687
Public-road crossing over Central of Georgia Ry	32 53 45.6	82 50 54.3	2,670

Magnetic declination for quadrangle, 1° 52′ E.

SANDERSVLLE QUADRANGLE—Continued.

North along Augusta Southern R. R.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tennille, Prim. Trav. Sta. No. 139, 1918	32 56 13.4	82 48 26.2	.....
Public-road crossing	32 56 34.7	82 48 27.5	2,163
Second-class road crossing	32 57 38.5	82 48 26.8	6,445
Street crossing	32 58 26.4	82 48 32.7	4,866
Sandersville station, "Prim. Trav. Sta. No. 147, 1918 Mac." (previously described); azimuth to eagle on courthouse, 179° 55′ 00″; azimuth to negro church spire, 670° 40′ 23″	32 58 51.0	82 48 41.6	2,604
Public-road crossing at telephone line	32 59 17.8	82 48 16.6	3,441
Second-class road crossing	32 59 53.8	82 47 24.1	5,765

SAVANNAH QUADRANGLE.

Northeast along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Little Ogeechee River, center of short girder span over	32 00 02.4	81 11 59.2	.....
Switchstand, at south end of siding	32 00 39.4	81 10 49.1	7,100
Road crossing	32 00 52.3	81 10 24.7	2,465
Road crossing, under grade	32 01 08.9	81 09 53.2	3,195
Milepost "Savannah 5," opposite	32 01 39.1	81 08 56.0	5,790
Road crossing	32 02 15.6	81 07 46.8	7,010
Savannah, street crossing, Montgomery Street	32 02 57.1	81 06 28.1	7,960
Street railroad crossing, near Bull Street, Whittaker Street line	32 03 08.3	81 06 06.9	2,150
Savannah, tower of post office building	32 04 40.33	81 05 35.51	9,680

Magnetic declination for line, 2° 15′ E.

Station 1, computed by triangulation	32 04 36.0	81 05 33.2	480
Railroad crossing, at Acid Phosphate Mills, Seaboard Air Line and Central of Georgia railroads	32 05 06.2	81 08 02.4	13,201
Central Junction, Atlantic Coast Line and Central of Georgia railroads	32 05 25.2	81 09 15.0	6,531
Central Junction, 41 feet west from crossing of Central of Georgia and Atlantic Coast Line railroads, 14 feet south of Central of Georgia track and 13 feet northeast of center of Seaboard Air Line track; iron post stamped "Prim. Trav. Sta. No. 54, 1917 Mac."; azimuth of tangent in Central of Georgia Ry., 107° 02′ 45″	32 05 25.2	81 09 15.5	40
Second-class road crossing	32 06 22.0	81 09 45.6	6,302
Intersection of tangents	32 07 06.8	81 10 04.5	4,805
Public-road crossing	32 07 35.7	81 10 15.4	3,065
Road crossing	32 08 33.5	81 10 37.4	6,135
Crossing of lumber company railroad and Atlantic Coast Line R. R.	32 09 11.0	81 10 51.6	3,990
Road crossing	32 09 51.2	81 11 06.9	4,260
Monteith flag station	32 10 41.4	81 11 24.2	5,291
Center of track opposite milepost Sav. 14	32 11 33.5	81 11 20.7	5,272
Switch stand at spur turnout	32 12 34.8	81 10 33.8	7,385
South end of long girder trestle	32 13 01.2	81 09 57.2	4,130
South end girder trestle Savannah River bridge	32 13 28.5	81 09 19.4	4,265

Southeast along Seaboard Air Line Ry. (By E. L. McNair in 1917.)

Exley station, public-road crossing	32 14 52.5	81 13 45.9	.....
Road crossing	32 14 19 9	81 13 40.6	3,325
Milepost 152	32 13 18.0	81 13 30.6	6,313
Second-class road crossing	32 12 48.6	81 13 25.9	2,997
Milepost 151	32 12 26.2	81 13 22.2	2,290
Meinhard siding, road crossing at north end of	32 11 10.2	81 12 49.9	8,166
Meinhard station, 80 feet north of public-road crossing, 18 feet east of center of track, 10 feet north and 10 feet west of northwest corner of station building; azimuth to switch stand about 1,900 feet north is 152° 10′ 00″; iron post stamped "Prim. Trav. Sta. No. 85, 1917 Mac"	32 10 53.9	81 12 39.8	1,862
Road crossing	32 09 58.3	81 12 06.9	6,292
Do	32 09 45.0	81 11 58.9	1,510
Overhead crossing of Savannah & Atlanta Ry	32 08 50.9	81 11 26.6	6,131
Road crossing	32 08 24.3	81 11 10.8	3,009
Public-road crossing	32 07 34.3	81 10 40.9	5,670
Second-class road crossing	32 06 52.2	81 10 15.8	4,775
Central Junction, 1.25 miles north of, level bench mark, 46 feet west of center of track, just north of public-road crossing	32 06 18.2	81 09 56.1	3,826
Savannah, about 3 miles northwest of, at Central Junction; post stamped "Prim. Trav. Sta. No. 54" (previously located)	32 05 25.2	81 09 15.5	6,398

Only two observations for magnetic declination along railroad, 0.0′ E. and 0.9′ E.

SAVANNAH QUADRANGLE—Continued.

Northeast along Savannah & Atlanta Ry. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Meinka road, "Prim. Trav. Sta. 85, Mac. 1917" (previously described)	32 10 53.9	81 12 39.8	.....
Keller, road crossing	32 11 07.4	81 12 51.8	1,708
Road crossing	32 12 37.3	81 13 39.3	9,960
Do	32 13 43.4	81 14 14.2	7,320
Coldbrook, road crossing	32 14 16.4	81 14 31.6	3,660
Road crossing	32 14 48.9	81 14 48.7	3,600
Savannah post-office building, U. S. C. & G. S. station	32 04 40.32	81 05 35.53	.....
Midland station, in front of, center of concrete water stand	32 04 43.4	81 06 38.6	5,438
Reliance Fertilizer Plant, intersection of Central of Georgia and Seaboard Air Line railroads	32 05 06.2	81 08 02.5	7,579
Central Junction, "Prim. Trav. Sta. No. 54, Mac. 1917"	32 05 25.2	81 09 15.5	6,576
Second-class road crossing	32 05 39.2	81 10 08.8	4,800
Clifton, road crossing	32 06 04.4	81 11 45.5	8,700
South end of small trestle	32 06 13.3	81 12 19.4	3,050
Center of small culvert	32 06 29.9	81 13 23.4	5,750
Windburn, road crossing at brickyard	32 06 39.9	81 14 01.8	3,460
Pooler station, 60 feet east of, 28 feet south of track; iron post stamped "Prim. Trav. Sta. No. 1, 1918 J"	32 06 53.9	81 14 56.7	4,934

SESSOMS QUADRANGLE.

Northwest along Atlanta, Birmingham & Atlantic Ry. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Beach, road crossing at	31 26 22.6	82 30 12.8	.....
Center of trestle at milepost 87	31 26 59.0	82 30 47.0	4,609
Center of track opposite milepost 86	31 27 40.2	82 31 27.0	5,420
Ware-Bacon county line	31 28 04.5	82 31 50.7	3,200
Murray, road crossing	31 28 19.3	82 32 04.9	1,940
Center of small trestle	31 29 21.9	82 33 05.6	8,220

SHIRLEY QUADRANGLE.

Northwest along Savannah & Atlanta Ry. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	32 30 21.1	81 26 02.5	.....
Do	32 31 04.5	81 26 38.7	5,370
Kildare, 50 feet west of station, 10 feet north of public road; iron post stamped "Prim. Trav. Sta. No. 9, 1918 J"	32 32 00.7	81 27 25.9	6,974

East along highways near south border of quadrangle.

Center of wooden bridge	32 32 12.8	81 26 50.4	3,275
Road fork at mail box 24	32 32 46.7	81 25 52.8	6,005
Crossroads	32 32 59.1	81 25 21.7	2,943
Road fork	32 33 00.5	81 24 38.3	3,714
Do	32 32 59.8	81 24 21.5	1,439
Well at church and school	32 32 55.4	81 24 10.9	1,016
Road fork at three corners	32 33 04.3	81 23 26.7	3,892
Center of wooden bridge	32 33 07.4	81 23 02.3	2,107
Crossroads	32 33 07.3	81 22 37.8	2,100
Road fork	32 32 54.0	82 21 43.9	4,805
Creek crossing	32 32 25.7	81 21 17.4	3,652
Crossroads	32 32 16.8	81 20 37.7	3,513
Road fork at R. F. Morel's mail box	32 31 49.1	81 19 57.7	4,419
Center of wooden bridge	32 31 31.5	81 19 39.3	2,377
Do	32 31 18.9	81 19 08.1	2,962
Crossroads	32 30 46.0	81 17 58.8	6,801
Road fork	32 30 27.4	81 17 49.5	2,039
Do	32 30 14.1	81 16 56.9	4,699

SHIRLEY QUADRANGLE—Continued.

West along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Kildare, Prim. Trav. Sta. No. 9 (previously described)	32 32 00.7	81 27 25.9	
Crossroads	32 31 41.6	81 27 46.2	2,593
Crossroads, at three mail boxes	32 31 31.7	81 28 50.4	5,588
Road fork	32 31 16.0	81 29 53.4	5,628

Magnetic declination for east border of quadrangle, 0.1° E.; for west border of quadrangle, 0.9° E.

Along highways near west border of quadrangle. (By E. L. McNair in 1918.)

Road crossing, Savannah & Atlanta Ry	32 35 02.9	81 29 57.6	
T road south	32 35 24.5	81 29 04.3	5,057
T road west	32 35 37.5	81 28 16.9	4,267
Road fork	32 36 03.1	81 27 43.1	3,890
T road west	32 36 27.4	81 27 07.7	3,899
Crossroads, old Savannah and Augusta road	32 37 01.6	81 26 40.4	4,176
Road fork	32 37 47.0	81 27 07.4	5,136
Do	32 38 45.7	81 27 44.0	6,704
Crossroads	32 39 28.1	81 28 05.7	4,676
T road west at schoolhouse	32 40 19.4	81 28 21.7	5,367
Road fork	32 40 45.7	81 28 23.0	2,670
Do	32 41 12.6	81 28 22.0	2,720
Hunters station, 6 miles east of, 3.5 miles west of Poor Robbins Landing, 80 feet south of crossroad fs, 15eet east of center of road, 3 feet from wire fence; iron post stamped "Prim. Trav. Sta. No. 119, 1918 Mac.;" azimuth to southwest edge of chimney on George E. Boddifore's house, 118° 47′ 15″	32 41 51.7	81 28 37.8	4,185

Along highways near north border of quadrangle. (Spur line unchecked.)

T road fork	32 41 40.2	81 28 00.3	
Road fork	32 41 26.2	81 27 12.1	4,362
Do	32 41 29.7	81 26 32.9	3,362
Do	32 41 44.0	81 26 21.6	1,747
Poor Robbins Landing, 110feet southwest of storehouse, in oak tree 2.5 feet above ground, 2 feet above spike in cross cut in tree; spike	32 42 08.1	81 25 45.2	3,952

Along Savannah & Atlanta Ry.

Road crossing	32 34 38.5	81 29 37.1	4,412
Do	32 33 46.0	81 28 53.4	6,488
Do	32 32 53.9	81 28 10.0	6,450
Kildare, 50 feet west of station, 10 feet north of public road; iron post stamped "Prim. Trav. Sta. No. 9, 1918 J"	32 32 00.7	81 27 25.9	6,568

Along highways near west border quadrangle.

Crossroads	32 42 51.5	81 29 18.5	6,971
T road	32 43 24.3	81 29 48.8	4,210

Along highways to Hudson Ferry. (Spur line unchecked.)

Center of bridge at creek crossing	32 37 15.8	81 26 01.0	
Hudson ferry, U. S. Engineers concrete bench-mark post at	32 37 04.2	81 24 45.7	6,546

Magnetic declination for west border of quadrangle, 0° 15′ E.; for north border of quadrangle, 0° 10′ E.

South along Seaboard Air Line Ry.

Savannah River, center of swing-span bridge, Georgia-South Carolina State line	32 31 29.2	81 15 46.3	
Public-road crossing	32 30 56.5	81 16 04.7	3,669
Second-class road crossing	32 30 06.0	81 16 13.7	5,157

SHOULDER QUADRANGLE.

Southwest along Georgia R. R. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Highway crossing over railroad	33 16 09.2	83 00 36.2	.....
Milepost 27	33 15 50.9	83 01 15.5	3,815
Glenford, road crossing just west of	33 15 19.2	83 02 05.4	5,312
Second-class T road southeast	33 28 55.2	83 00 18.0	.....
White Plains, 1.5 miles east of, crossroads (Kendall 1911)	33 28 38.0	83 00 44.2	2,821

SPARKS QUADRANGLE.

From middle of south border of quadrangle northwest along Georgia Southern & Florida Ry. to north border of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Private-road crossing	31 00 01.1	83 22 37.5	.....
Road crossing	31 00 50.2	83 22 54.7	5,185
Road crossing, 243 feet northwest of point opposite milepost 136	31 01 16.3	83 23 03.8	2,745
Berrien-Lowndes county-line post	31 01 46.1	83 23 14.3	3,145
Cecil, road crossing at north end of station	31 02 45.2	83 23 35.0	6,245
Second-class road crossing	31 03 40.9	83 23 54.6	5,870
Milepost 132	31 04 34.4	83 24 13.4	5,653
Private-road crossing	31 04 57.1	83 24 21.4	2,387
Road crossing, 840 feet northwest of milepost 131	31 05 32.5	83 24 33.8	3,740
Milepost 130	31 06 14.6	83 24 48.6	4,440
Public-road crossing	31 07 13.8	83 25 09.5	6,250
Adel, street crossing at north end of station	31 08 11.4	83 25 29.8	6,085
Second-class road crossing	31 08 52.3	83 25 44.3	4,320
Public-road crossing	31 09 31.6	83 25 58.2	4,150
Sparks, 390 feet northwest of point opposite station, 40 feet west of center of main track, 90 feet north of center of street, on ground about 2 feet higher than track; iron post stamped "Prim. Trav. Sta. No. 47, 1917 Mac."; azimuth of long tangent, 163° 04′	31 10 01.0	83 26 09.1	3,120
Crossing of Georgia and Florida Ry. with Georgia Southern & Florida Ry	31 10 09.5	83 26 11.6	882
Intersection of long tangents; deflection, plus 4° 38′	31 11 10.4	83 26 33.2	6,428
Road crossing	31 11 55.3	83 26 44.6	4,645
Public-road crossing, 800 feet northwest of road crossing at turpentine still	31 12 47.0	83 26 57.8	5,350
Second-class road crossing near switch stand, south end of siding	31 14 06.6	83 27 18.0	8,230
Road crossing	31 14 53.7	83 27 30.0	4,865

SPARTA QUADRANGLE.

Southwest along Georgia R. R. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Public-road crossing	33 21 44.9	82 45 40.0	.....
Highway crossing over railroad	33 21 34.3	82 46 13.6	3,050
Public-road crossing	33 21 30.2	82 47 18.5	5,520
Center of iron truss on bridge over Ogeechee River	33 21 23.5	82 47 52.3	2,949
Mayfield station, 186 feet S. 31° 30′ W. from semaphore post, 35 feet south of center of track, 12 feet northwest of well on bank, 3 feet above track; iron post stamped "Prim. Trav. Sta. No. 156, 1918 Mac."; azimuth to church steeple, 179° 00′	33 21 15.0	82 48 03.8	1,301
Public-road crossing	33 21 09.4	82 48 12.4	933
Second-class road crossing	33 20 41.6	82 48 52.4	4,405
Do	33 20 05.9	82 49 43.5	5,645
Highway crossing overhead	33 19 21.6	82 51 29.1	10,023
Milepost 18	33 18 52.6	82 52 44.9	7,070
Culverton station, road crossing at	33 18 33.9	82 53 33.8	4,560
Public-road crossing	33 18 16.1	82 54 20.2	4,335
Center of creek crossing, high trestle over	33 17 52.6	82 55 21.6	5,730
Granite Hill station, road crossing at	33 17 34.0	82 56 10.4	4,555
Road crossing	33 17 26.7	82 56 29.3	1,770
Center of creek crossing, high trestle over	33 17 19.5	82 56 48.0	1,750
Road crossing	33 17 08.7	82 57 16.4	2,650
Sparta station, 126 feet N. 34° E. from, on bank about 35 feet north of railroad track; iron post stamped "Prim. Trav. Sta. No. 157, 1918 Mac."; azimuth to top of steel water tank, 235° 34′	33 16 48.9	82 58 09.1	4,900
Center of track at overhead highway bridge	33 16 48.8	82 58 33.2	2,479
Road crossing, Milledgeville-Sparta road (B. 551, p. 106)	33 16 43.0	82 59 23.5	3,892

No magnetic bearings taken.

SPARTA QUADRANGLE—Continued.

East along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Sparta, "Prim. Trav. Sta. No. 157, 1918 Mac." (previously described)	33 16 48.9	82 58 09.1	.....
Second-class road south	33 16 15.2	82 57 36.7	4,376
Road fork	33 16 06.6	82 57 08.5	2,552
Second-class road south	33 15 45.4	82 56 20.0	4,647
Fork of road, center of intersection	33 15 15.3	82 54 52.1	8,067
Fork of road	33 15 11.3	82 54 16.0	3,097
Sparta, 7.3 miles east of, on road to Shoals, 100 feet east of Little Ogeechee Creek, in triangle at fork of road, locality known as Culvers Mill Pond; iron post stamped "Prim. Trav. Sta. No. 158, 1918 Mac."; azimuth to base of iron rod supporting mail boxes, 66° 33′ 00″; azimuth to nail in pine tree 5 feet above ground, 66° 50′ 35″	33 15 26.2	82 51 27.8	14,369
Fork of road	33 15 30.3	82 50 55.8	2,746
Crossroad	33 15 27.0	82 50 29.1	2,300
Fork of road, straight line of road northwesterly	33 15 09.1	82 49 29.8	5,357
Shoals, center of bridge over Ogeechee River	33 15 11.4	82 45 21.4	.....
Fork of road	33 15 31.3	82 45 18.5	2,019
Shoals, 1.33 miles north of, on road to Warrenton, 15 feet west of center of road, at corner of yard fence of tenant house of Mr. Long; iron post stamped "Prim. Trav. Sta. No. 159, 1918 Mac." (No azimuth)	33 16 23.6	82 45 12.0	5,311

North along highways near east border of quadrangle.

Fork of road, 25 feet west of persimmon tree, in line with road southeast and northwest, 15 feet north of road	33 17 49.2	82 45 10.5	.....
Jewell, 0.25 mil east of, fork of road	33 17 43.8	82 46 17.9	5,745
Center of bridge over Long Creek	33 18 39.3	82 46 07.6	4,777
Crossroads	33 19 08.4	82 46 30.2	4,296
Center of creek crossing, on bridge over	33 19 33.7	82 46 42.3	2,755
Do	33 20 19.9	82 47 04.5	5,031
Fork of road	33 21 13.3	82 47 21.1	5,580
Ogeechee River, bridge over	33 21 19.9	82 47 51.4	2,652
Mayfield, "Prim. Trav. Sta. No. 156, 1918 Mac." (previously described)	33 21 15.0	82 48 03.8	1,162
Public crossroads	33 21 29.7	82 48 59.5	4,952
Fork of road about 400 feet southeast of church	33 21 51.4	82 50 04.4	5,926
Fork of road	33 21 54.3	82 50 35.1	2,617
Do	33 23 04.8	82 52 03.7	10,349
Creek crossing	33 24 11.1	82 52 15.8	6,778
Road fork, 30 feet southeast of mail box	33 24 23.0	82 52 21.4	1,290
Fork of road, about 350 feet north of church	33 25 27.7	82 52 42.1	6,779
Powelton, northwest end of town, on Baptist Church grounds, 55 feet west of church tower; iron post stamped "Prim. Trav. Sta. No. 160, 1918 Mac."; azimuth to top of Veazy monument, 80 feet distant, 358° 45′ 00″; azimuth to 1 ft dge of chimney on house 400 feet distant, 29° 49′ 30″	33 25 44.1	82 52 14.7	2,855
Millers Mill, center of Ogeechee River bridge	33 26 13.7	82 50 50.0	7,785
Road fork	33 26 44.0	82 50 22.0	3,886
Do	33 27 20.6	82 49 57.6	4,250
Road fork, at mail boxes	33 27 37.6	82 49 50.9	1,812
Crossroads	33 28 09.5	82 49 09.6	4,767
Bridge over creek crossing	33 28 25.9	82 48 59.2	1,890
Do	33 29 27.8	82 48 35.7	6,565

West along highways near north border of quadrangle.

Powelton, Prim. Trav. Sta. No. 160, 1918 Mac	33 25 44.1	82 52 14.7	.....
County line between Taliaferro and Hancock counties, bridge over creek crossing	33 26 47.4	82 52 23.4	6,444
Fork of road, 47 feet N. 8° W. to concrete sign "Crawfordsville 6.5 miles," 28 feet west to concrete sign "Crawfordsville 7 miles"	33 27 57.8	82 52 55.6	7,610
Crossroads, 20 feet north 22° east to sign "Crawfordsville 6.5 miles"	33 28 10.4	82 53 10.3	1,782
Fork of road	33 27 56.2	82 53 52.6	3,861
Do	33 28 06.3	82 54 38.5	4,025
Fork of road, 30 feet N. 40° W. to concrete signpost	33 29 16.6	82 55 56.5	9,697
Fork of road, 20 feet N. 36° E. to concrete sign painted "White Plains 5 miles"	33 29 24.7	82 57 15.2	6,717
T road north opposite concrete signpost marked "White Plains 4.5 miles"	33 29 27.7	82 58 14.0	4,996
County line between Taliaferro and Greene counties, center of road at	33 29 23.7	82 59 09.6	4,724

Magnetic declination near south and east borders of quadrangle, 1° 10′ E.; near north border of quadrangle, 1° 02′ E.

SPARTA QUADRANGLE—Continued.

West along Georgia R. R. near north border of quadrangle. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Public-road crossing	33 28 49.6	82 45 15.3	.....
Do	33 28 52.7	82 45 50.2	2,970
Second-class road crossing	33 28 57.2	82 46 39.9	4,230
Milepost 56	33 29 05.4	82 47 34.8	4,721
Road crossing	33 29 38.5	82 48 03.3	4,133
Do	33 29 50.3	82 48 11.8	1,390

SPREAD QUADRANGLE.

Along highways near north border of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
White church, four corners at	33 14 49.9	82 27 03.2	.....
Gin, crossroads at	33 14 30.6	82 26 13.8	4,617
H. H. Jackson's house, 400 feet southeast of, 3 miles west of Wrens, on north side of road; iron post stamped "Prim. Trav. Sta. No. 22, 1918 H"; 2,352 feet northwest is nail in hub on north side of road, azimuth, 118° 39′ 50″	33 13 58.6	82 25 04.0	6,762
Big white house on north side of road, T road north at	33 13 05.6	82 23 35.9	9,200

Along Augusta Southern R. R. near north border of quadrangle.

Wren, street crossing, just east of station	33 12 31.0	82 23 11.7	4,053
Road crossing, 20 feet northwest to crossing sign	33 12 37.2	82 21 36.2	8,133
Milepost 33, second-class road crossing 200 feet east of	33 12 37.7	82 20 46.8	4,200
Road crossing, 20 feet north to two mail boxes	33 12 38.3	82 19 38.2	5,830

Along highways near north border of quadrangle.

Matthews, road crossing west of station	33 12 38.8	82 18 32.2	5,600
Noah, road crossing at station	33 12 54.5	82 17 09.7	7,188
Road crossing, 20 feet northwest to crossing sign	33 13 05.5	82 16 22.0	4,201

Along Augusta Southern R. R. near north border of quadrangle.

Schoolhouse, on south side of railroad road crossing at	33 13 16.9	82 15 41.5	3,632
Road crossing under railroad	33 13 48.0	82 15 10.8	4,079

Along highways near west border of quadrangle.

Old store building, northwest corner of	33 05 15.7	82 29 27.1	.....
Clarks Mill, west edge of new mill race	33 04 41.4	82 28 15.9	6,977
T road northeast, 30 feet east to three mail boxes	33 04 11.9	82 27 18.2	5,750
Bridge, center of	33 03 01.8	82 26 16.1	8,842
House, road opposite, 20 feet west to W. H. Ratliff's mail box No. 72	33 01 58.6	82 24 55.8	9,353
Louisville, three corners, 1 mile northeast of	33 01 08.7	82 24 17.0	6,030

Along Augusta Southern R. R. near north border of quadrangle.

Louisville, in northeast part of, 20 feet southwest of corner of Peachtree and West Tenth streets; iron post stamped "Prim. Trav. Sta. No. 24, 1918 H"; 801 feet southwest to center of water plug, azimuth, 45° 47′ 20″	33 00 23.8	82 24 18.0	4,545
Louisville, water plug at southwest corner of Peachtree and West Ninth streets	33 00 18.3	82 24 24.8	800

SPREAD QUADRANGLE—Continued.

Along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Louisville, brick culvert 1 mile east of	33 00 15.6	82 23 02.6	7,006
T road south, 30 feet southeast to Goodrich signpost	33 00 30.1	82 21 51.9	6,197
Louisville, 4 miles east of, at corner where Rosier road leaves Dixie Highway, 10 feet east to Ramsey sign; iron post stamped "Prim. Trav. Sta. No. 25, 1918 H"; 1,120 feet southeast to nail in hub on north side of road, azimuth, 311° 42′ 30″	33 00 44.0	82 20 44.3	5,923
Middle of wooden bridge	33 00 29.1	82 19 17.9	7,513
T road south, 300 feet northwest to house	33 00 04.0	82 18 18.4	5,667
Negro schoolhouse, T road south at	33 01 07.2	82 19 40.6	.....
T road south, 20 feet southeast to Goodrich sign	33 01 18.6	82 18 40.4	5,260
Second-class road south, 500 feet south to house	33 01 49.1	82 17 41.1	5,916
Burke-Jefferson county line, crossing of	33 02 14.9	82 17 16.6	3,348
Fork in road southeast toward Vidette	33 02 49.8	82 16 20.3	5,942
Milepost 15 miles from Waynesboro, road opposite	33 03 14.1	82 15 27.4	5,136
Louisville, east end of bridge over Rocky Comfort River, northwest of	33 00 16.4	82 25 15.3	.....

Magnetic declination for north border of quadrangle, 1° 16′ E.; for west border of quadrangle, 1° 20′ W.; for south border of quadrangle, 1° 13′ E.

Along highways. (By O. B. Walsh in 1918.)

Prim. Trav. Sta. No. 224, 1918 (described previously)	33 13 58.6	82 25 04.0	.....
Wren, 4 miles west of, at southeast angle of road crossing at Hart's Grove Church; iron post stamped "Prim. Trav. Sta. No. 1, W 1918". Elev. 491	33 14 49.59	82 27 03.06	11,352

STILLMORE QUADRANGLE.

West along Central of Georgia Ry. near east border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Center of trestle No. 83.6	32 23 37.7	82 00 28.3	.....
Road crossing, at water tank	32 23 38.0	82 00 41.9	1,169
Road crossing	32 23 42.4	82 01 44.3	5,370
Do	32 23 43.9	82 02 04.6	1,750
Do	32 23 47.9	82 03 01.1	4,860
Metter, station of Central of Georgia Ry., opposite semaphore, center of track	32 23 50.6	82 03 40.0	3,353

South along highways near east border of quadrangle.

Road fork	32 29 52.7	82 01 07.2	.....
Do	32 29 18.8	82 00 31.5	4,587
Crossroad	32 29 07.4	82 00 17.7	1,659
Crossroad (in Register quadrangle)	32 28 16.7	81 59 43.4	5,895
Do	32 27 57.1	81 59 53.9	2,160
Center of bridge	32 27 21.1	82 00 40.5	5,431
Road fork	32 26 48.7	82 01 22.0	4,838
Do	32 26 21.9	82 01 35.7	2,946
Do	32 26 00.1	82 01 27.8	2,297
Do	32 25 25.8	82 02 04.4	4,677
Center of bridge	32 24 54.2	82 02 31.8	3,964
Road fork	32 24 24.3	82 02 51.1	3,447
Do	32 23 59.3	82 03 21.3	3,619
Metter, station of Central of Georgia Ry., opposite semaphore, center of track	32 23 50.6	82 03 40.0	1,826
Metter, 15 feet north of track of Central of Georgia Ry., 100 feet west of station, 2 feet south of crossing sign; iron post stamped "Prim. Trav. Sta. No. 21, 1918 J"	32 23 51.0	82 03 41.5	132
Crossroads	32 23 21.1	82 03 33.6	3,101
Road forks	32 22 59.4	82 03 35.1	2,188
Do	32 22 15.0	82 03 13.9	4,863
Center of road, opposite well on east side	32 21 22.4	82 03 02.7	5,402
Crossroads	32 20 57.3	82 03 11.2	2,645
Road forks	32 20 50.9	82 02 26.7	3,881
Do	32 20 32.0	82 01 35.2	4,817
Crossroads	32 20 23.9	82 00 08.4	7,504

Magnetic declination for east part of quadrangle, 0.6° E.

STILLMORE QUADRANGLE—Continued.

Northwest along Wadley Southern Ry. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Stillmore, Prim. Trav. Sta. No. 130	32 26 29.62	82 13 22.97	.....
Crossing of Wadley Southern and Georgia & Florida railroads	32 26 52.6	82 13 12.1	2,508
Center of trestle at creek crossing	32 27 31.8	82 13 42.8	4,745
Private-road crossing	32 27 52.4	82 14 01.2	2,621
Road crossing, in line with road west	32 28 23.4	82 14 18.9	3,474
Public-road crossing	32 28 55.1	82 14 40.7	3,712

Northeast along highways near north border of quadrangle.

Stillmore, Prim. Trav. Sta. No. 130, Mac	32 26 29.62	82 13 22.97	.....
Stillmore, 2,380 feet east of Georgia & Florida Ry. station, at street intersection	32 26 31.6	82 12 43.9	3,356
T road east	32 27 02.2	82 12 45.6	3,090
Small creek bridge	32 27 19.8	82 12 20.8	2,764
Forks of road, second-class road north	32 27 43.6	82 11 46.4	3,800
Forks of road, about 800 feet north of end of bridge over Canoochee River	32 28 15.6	82 11 23.0	3,812
Forks of road, second-class road south	32 28 31.2	82 10 39.5	4,051
Forks of road	32 28 49.8	82 10 15.5	2,784
T road corners, about 18 feet north of fence in front of house	32 29 35.2	82 09 27.9	6,136
Stillmore, 6 miles northeast of, at Beulah Church, about halfway between schoolhouse and church, 20 feet west of center of road; iron post stamped "Prim. Trav. Sta. No. 131, Mac. 1918" (See Garfield quadrangle for additional positions near border.)	32 29 52.9	82 09 20.7	1,890

East along highways near north border of quadrangle.

Forks of road, at angle of 17½° in main road	32 29 29.3	82 08 45.9	.....
Fork of road, Swainsboro-Metter road	32 29 11.3	82 08 01.9	4,190
Crossroads	32 29 18.9	82 06 47.9	6,391
Do	32 29 39.8	82 05 53.9	5,084
Center of crossing, Fifteen-mile Creek, near middle of long bridge	32 29 23.4	82 05 07.9	4,277
T road southerly	32 29 07.9	82 03 54.7	6,467
Angle of 25½° in road	32 29 28.8	82 03 34.6	2,724
T road west	32 29 46.3	82 03 03.1	3,230

Magnetic declination along north border of quadrangle, 0.8° E.

Along Georgia and Florida Ry. near northwest border of quadrangle. (By E. L. McNair in 1918.)

Road crossing at water tank	32 29 54.1	82 12 09.4	.....
Road crossing	32 29 25.4	82 12 26.5	3,250
Do	32 28 44.9	82 12 50.6	4,580
Do	32 28 18.7	82 12 55.3	2,671
Do	32 27 52.9	82 12 58.7	2,621
Stillmore, crossing of Georgia & Florida and Midland railroads	32 26 52.7	82 13 12.0	6,194
Stillmore station, 1,000 feet west of, 180 feet east of road crossing; iron post stamped "Prim. Trav. Sta. No. 130, 1918 Mac."	32 26 29.6	82 13 23.0	2,508
U. S. Coast Survey station Hon	32 26 27.27	82 13 16.33	.....

Along Central of Georgia Ry. east through center of quadrangle.

U. S. Coast Survey station Cline	32 26 17.95	82 12 19.29	.....
Emanuel-Candler county-line crossing	32 25 59.8	82 11 16.9	5,653
Road crossing	32 25 42.2	82 10 16.9	5,441
Do	32 25 20.3	82 09 01.9	6,800
Canoe station, road crossing at	32 25 09.7	82 08 25.6	3,290
Road crossing	32 24 49.0	82 07 14.4	6,450
Do	32 24 41.0	82 06 47.3	2,464
Do	32 24 10.1	82 05 01.8	9,570
U. S. Coast Survey station "Metter"	32 23 51.61	82 03 55.03	6,021

STILLMORE QUADRANGLE—Continued.

West along highways near south border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork southwest to Collins	32 16 21.7	82 00 07.6	.....
Road fork	32 16 45.5	82 00 37.5	3,526
Crossroads	32 17 01.6	82 01 08.2	3,100
Road fork, Swainsboro and Cobbtown	32 17 30.9	82 02 06.8	5,845
Center of road, opposite well on north side of road	32 17 23.7	82 03 06.6	5,190
Crossroads	32 17 05.1	82 04 22.0	6,745
Do	32 16 54.5	82 05 10.5	4,280
Road fork	32 16 41.7	82 05 27.4	1,967
Center of small bridge	32 16 29.4	82 05 59.9	3,051
Road fork	32 16 35.2	82 06 41.8	3,650
Center of bridge	32 16 37.2	82 07 04.9	1,999
Road fork	32 16 56.0	82 07 50.1	4,324
Cobbtown, S. 38° W. 80 feet from southwest corner of Wadley Southern Ry.; iron post stamped "Prim. Trav. Sta. No. 32, J 1918"	32 16 49.4	82 08 21.2	2,751
Crossing of Vidalia road and Wadley Southern Ry	32 17 09.2	82 08 26.3	2,057
Road fork	32 17 31.5	82 08 33.8	2,343
Crossroads	32 17 37.6	82 10 40.5	10,894
Center of bridge	32 17 34.0	82 11 09.4	2,508
T road south	32 17 21.2	82 12 00.1	4,546
Crossroads	32 17 16.7	82 12 53.5	4,613
Ohoopee River, east end of bridge over	32 17 05.7	82 13 42.1	4,314
Ohoopee River, 1.25 miles west of Coleman bridge over, 300 feet southwest of Cowan Church, in southeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 37, J 1918."	32 16 33.2	82 14 56.1	7,164
Road fork at church	32 15 51.5	82 14 39.1	4,497

Magnetic declination along south border of quadrangle, 0° 45′ E.

SYLVANIA QUADRANGLE.

Northwest along Central of Georgia Ry. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	32 30 31.3	81 30 30.4	.....
Do	32 30 51.4	81 31 05.8	3,642
Effingham-Screven county line	32 31 01.1	81 31 26.8	2,050
Oliver, road crossing at	32 31 16.0	81 31 59.0	3,142
Road crossing	32 31 43.8	81 32 58.8	5,838
Do	32 31 52.8	81 33 19.3	1,978
Do	32 31 54.7	81 33 46.7	2,377
Do	32 31 59.2	81 34 29.6	3,680
Do	32 32 10.4	81 35 22.3	4,654
Halcyondale station, 100 feet west by 80 feet south of; iron post stamped "Prim. Trav. Sta. No. 5, 1918 J"	32 32 18.3	81 35 54.7	2,892
Center of trestle 52.1	32 32 51.6	81 38 06.2	11,747
Road crossing at section house	32 33 13.0	81 39 31.9	7,650
Cameron, road crossing	32 33 26.9	81 40 27.4	4,950
Center of trestle 55.1	32 33 36.6	81 41 02.0	3,119
Center of trestle 55.6	32 33 48.7	81 41 28.7	2,588
Road crossing	32 34 12.6	81 42 10.3	4,310
Dover station, opposite semaphore, in center of track; nail	32 34 36.9	81 42 52.4	4,357

Northeast along Central of Georgia Ry.

Road crossing	32 31 50.4	81 44 58.5	.....
Do	32 32 28.0	81 44 38.7	4,160
Do	32 32 42.9	81 44 22.7	2,042
Do	32 33 07.6	81 43 48.6	3,840
Donegal, road crossing, 100 feet south of station	32 33 29.7	81 43 34.7	2,524
Road crossing	32 33 54.0	81 43 26.4	2,558
South end of trestle over Ogeechee River	32 34 02.0	81 43 21.4	919
North end of trestle over Ogeechee River	32 34 31.1	81 43 01.2	3,412
Dover, 300 feet west of, 3 feet south of switch stand; iron post stamped "Prim. Trav. Sta. No. 6, 1918 J"	32 34 38.6	81 45 55.7	883
Dover, opposite semaphore, in center of track; nail	32 34 36.9	81 42 52.4	331

SYLVANIA QUADRANGLE—Continued.

West along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork	32 31 17.2	81 30 14.0	.....
Do	32 31 18.6	81 31 18.1	5,489
Oliver, road crossing	32 31 16.0	81 31 59.0	3,509

Along highways near south border of quadrangle. (By Oscar Jones in 1918.)

Crossroads at schoolhouse	32 30 42.9	81 44 09.6	.....
Road forks	32 30 35.5	81 43 39.1	2,715
Do	32 30 53.5	81 43 25.1	2,182
Eureka, road crossing	32 31 03.5	81 42 57.0	2,609
Wooden bridge, center of	32 31 08.3	81 42 29.9	2,374
Road forks	32 31 27.5	81 41 59.1	3,278
Clito and River roads, crossroads	32 31 38.0	81 41 23.7	3,213
Buck Creek, center of wooden bridge over	32 31 26.8	81 40 06.5	6,706
Crossroads	32 31 00.8	81 39 34.6	3,794
Road fork	32 30 23.1	81 38 56.2	5,034

Along Savannah & Atlanta Ry. (By E. L. McNair in 1918.)

Eureka Springs station, road crossing	32 36 33.5	81 30 45.9	.....
Road crossing	32 35 52.7	81 30 38.8	4,174
Newingston station, 900 feet south of, 68 feet north from center of track; iron post stamped "Prim. Trav. Sta. No. 111, 1918 Mac."	32 35 14.4	81 30 06.1	4,776
Sylvania station, about 400 feet south of, 30 feet east of a public-road crossing; iron post stamped "Prim. Trav. Sta. No. 109, 1918 Mac."	32 44 49.4	81 38 24.0	3,460
Road crossing	32 43 54.5	81 38 02.2	5,856
Do	32 43 06.0	81 37 43.1	5,175
Do	32 42 47.9	81 37 30.0	2,147
Kitson station, road crossing 200 feet north of	32 41 58.9	81 36 38.7	6,610
Intersection of railroad tangent	32 41 40.9	81 36 19.9	2,430
Road crossing	32 41 32.8	81 35 54.5	2,330
Do	32 41 09.3	81 34 42.9	6,564
Do	32 40 47.3	81 34 18.1	3,068
Do	32 39 55.8	81 33 34.0	6,430
Hunters station, 190 feet south of public-road crossing, 25 feet west of track; iron post stamped "Prim. Trav. Sta. No. 110, 1918 Mac."	32 39 14.7	81 32 59.2	5,116
Road crossing	32 38 43.7	81 32 32.2	3,895
Sheppard station, road crossing south of	32 38 12.6	81 32 05.7	3,880
Road crossing	32 37 46.6	81 31 34.5	3,740
Do	32 37 01.3	81 30 56.2	5,637

Along highway near northeast corner of quadrangle.

Crossroads	32 43 46.6	81 30 11.5	.....
Road fork	32 44 27.1	81 30 55.6	5,560

Along Central of Georgia Ry. from Millen southeast. (By G. T. Hawkins in 1918.)

Milepost 60, railroad track opposite	32 36 14.8	81 44 57.4	.....
Milepost 59, private road crossing, gates north and south	32 35 40.9	81 44 20.9	4,630
Dover, road crossing 1 mile west of	32 35 06.8	81 43 42.5	4,767
Dover, opposite station, railroad track	32 34 36.9	81 42 52.4	5,250

Along highways through center of quadrangle. (By E. L. McNair in 1918.)

Road fork	32 44 20.1	81 44 01.2	.....
Do	32 43 50.0	81 44 31.9	4,015
Crossroads, 120 feet north of second-class crossroads	32 43 11.5	81 44 39.2	3,944
T road southwest	32 43 04.7	81 44 13.2	2,340
Creek crossing	32 42 54.6	81 43 33.2	3,566
Crossroads	32 42 44.4	81 42 55.1	3,418

SYLVANIA QUADRANGLE—Continued.

Along highways through center of quadrangle. (By E. L. McNair in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork	32 42 25.1	81 42 16.8	3,809
Pine tree at corner of barnyard fence; nail in root	32 41 18.1	81 41 49.4	7,164
Road fork	32 40 36.7	81 41 33.0	4,423
Creek crossing	32 39 41.2	81 41 21.0	5,704
Dover, 5 miles north of, at Double Head Church, 90 feet south and 30 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 120, 1918 Mac."	32 38 52.8	81 41 25.3	4,892
Crossroads	32 38 44.7	81 40 25.9	5,151
Road fork	32 37 52.7	81 38 47.3	9,931
Crossroad	32 37 30.7	81 38 06.4	4,144
Road fork	32 37 20.4	81 36 48.9	6,711
Captola, road fork at	32 37 36.9	81 35 52.9	5,076
Ogeechee Creek crossing	32 37 49.9	81 35 49.5	1,349

East along highways near north border of quadrangle.

Road fork	32 44 56.3	81 36 03.7	7,594
T road southwest	32 44 47.7	81 33 52.5	4,493
Road fork	32 44 58.7	81 32 36.5	6,572
Crossroad at sawmill	32 44 58.0	81 31 52.4	3,770

Along highway through center of quadrangle.

Road fork, sawmill	32 39 07.7	81 35 28.9	.....
T road corner near schoolhouse	32 39 34.5	81 35 08.0	3,247
Road fork	32 39 17.2	81 34 07.9	5,430
Crossroads	32 39 22.8	81 33 44.3	2,100

Magnetic declination for north border and through center of quadrangle, 0° 30′ E

TIFTON QUADRANGLE.

Northwest along Georgia Southern & Florida Ry. near east border of quadrangle to Tifton. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Public-road crossing	31 26 11.1	83 30 20.1	.....
Tifton, 0.6 mile south of, at intersection of Atlanta, Birmingham & Atlantic and Georgia Southern & Florida railroads	31 26 44.4	83 30 32.7	3,530
Tifton, just west of intersection of Atlantic Coast Line and Georgia Southern & Florida railroads, 62 feet north of Atlantic Coast Line R. R., in top of concrete post flush with surface of ground; bronze tablet stamped "Tifton A 1917"	31 27 14.28	83 30 44.64	3,193

TOWNS QUADRANGLE.

Near east border of quadrangle. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Windlass, at north ferry landing	31 52 11.2	82 45 08.0	.....
Lumber City, 6 miles southwest of, 20 feet northwest of Burkett ferry sign; crossroads	31 53 06.0	82 45 45.5	6,404
Road fork to north	31 53 25.4	82 45 00.5	4,349

TRAVISVILLE QUADRANGLE.

From east border of quadrangle, near center, southwest along Atlantic Coast Line R. R. to west border. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 107	31 07 37.5	82 30 25.9	.....
Glenmore, 60 feet southwest of station, road crossing	31 07 09.9	82 31 38.8	6,925
Milepost "Sav. 110"	31 06 34.3	82 33 12.8	8,920
Road crossing (public)	31 06 16.7	82 33 59.1	4,405
Manor, 150 feet west of station, 50 feet northwest of center of track, in line of roadway northwest; iron post stamped "Prim. Trav. Sta. No. 40, 1917, Mac."; azimuth of long tangent in railway track, 66° 12′	31 06 06.8	82 34 26.7	2,603
Public-road crossing	31 05 50.7	82 35 07.9	3,929
Public-road crossing, 1,420 feet northeast of milepost 113	31 05 36.7	82 35 44.7	3,500
Ware-Clinch county-line crossing	31 04 58.8	82 37 24.3	9,465
Public-road crossing, 1,295 feet southwest of milepost S 115	31 04 43.6	82 38 04.4	3,815
Argyle, 450 feet northeast of station, road crossing	31 04 24.4	82 38 54.6	4,775
Milepost 117	31 04 06.4	82 39 41.8	4,490
Private-road crossing, 80 feet northeast of milepost Sav. 118	31 03 45.6	82 40 36.5	5,205
Travisville, private-road crossing at spur	31 03 34.5	82 41 05.7	2,770
Road crossing, 25 feet southwest of milepost 120	31 03 02.8	82 42 28.7	7,905
Private-road crossing	31 02 56.3	82 42 45.6	1,605
Private-road crossing, 2,300 feet northeast of milepost Sav. 122	31 02 29.7	82 43 55.4	6,640
Homerville, in courthouse grounds, 35 feet south of brick building, just outside of iron fence and 12 feet southwest of gate; iron post stamped "Prim. Trav. Sta. No. 41, 1917 Mac."; azimuth of long tangent, 66° 01′	31 02 12.0	82 44 54.8	5,463

VALDOSTA QUADRANGLE.

From east border of quadrangle southwest along Atlantic Coast Line R. R. to Valdosta, thence northwest along Georgia Southern & Florida Ry. to north border of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	30 50 03.0	83 16 02.7	.....
Valdosta, just west of station, at Patterson Street crossing	30 49 47.3	83 16 42.8	3,838
Valdosta triangulation station of the U. S. Coast and Geodetic Survey, on Atlantic Coast Line R. R. right of way, at Valdosta railroad station, 5.5 meters south from main track, 16.58 meters south of southeast corner of passenger station, 13 meters west from middle of Ashley Street. Reference mark: Northeast corner of brick building owned by Armour & Co., distant 17.64 meters. Reference mark: Distance 60.73 meters, standard disk 30 centimeters from south edge of concrete depot platform, 12 meters east from middle of Patterson Street, 10.28 meters south from southwest corner of passenger station	30 49 48.09	83 16 40.25	238
Valdosta, 0.6 mile west of station, 51 feet east of intersection of Atlantic Coast Line and Georgia Southern & Florida railroads; iron post stamped "Prim. Trav. Sta. No. 45, 1917 Mac."; azimuth to top of large water tank, about 0.5 mile distant, 307° 34′ 30″	30 49 33.8	83 17 16.7	3,252
Road crossing near north end of siding	30 49 48.4	83 17 37.6	2,344
Road crossing	30 50 31.3	83 18 37.0	6,755
Private-road crossing	30 51 16.8	83 18 57.2	4,919
Withlacoochee River, north end of pile trestle	30 51 51.5	83 19 22.0	4,119
Intersection of tangents	30 52 39.2	83 20 03.4	6,020
Road crossing at spur track	30 53 16.9	83 20 16.5	3,974
Mineola, crossing of lumber company's road, 830 feet southeast of station	30 54 13.6	83 20 36.2	5,980
Mineola, 50 feet northwest of point opposite station, road crossing	30 54 22.1	83 20 39.2	900
Road crossing	30 55 03.7	83 20 53.6	4,385
Road crossing, 365 feet northwest of milepost 143	30 55 26.6	83 21 01.6	2,420
Road crossing	30 56 05.4	83 21 15.1	4,095
Do	30 57 11.3	83 21 38.1	6,950
Do	30 58 03.0	83 21 56.2	5,450
Road crossing, 175 feet southeast of point opposite milepost 139	30 58 42.0	83 22 09.8	4,115
Hahira, road crossing at city-limit sign	30 59 02.3	83 22 16.9	2,140
Hahira, crossing of street, just south of station	30 59 27.5	83 22 25.7	2,605
Hahira, 950 feet northwest of point opposite station, 60 feet northeast of center of main track, 120 feet northwest of street crossing tracks, 25 feet north of telephone pole; iron post stamped "Prim. Trav. Sta. No. 46, Mac. 1917"; azimuth of long tangent, 163° 14′ 00″; azimuth to Methodist Church, 268° 13′ 00″; to Baptist Church, 323° 25′ 15″; to center of top of steel water tank, 335° 36′ 00″	30 59 37.6	83 22 28.6	1,046

VIDALIA QUADRANGLE.

North near east border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road east	32 04 38.4	82 15 04.0	.....
Driggins crossroads	32 04 55.8	82 15 06.4	1,772
Crossroads 300 feet west of schoolhouse	32 05 37.7	82 15 28.8	4,645

WADLEY QUADRANGLE.

Along highways near north border of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
New bridge over stream course south, east end of	32 59 55.9	82 17 29.2	.....
Jefferson-Burke county line, crossing of	32 59 28.0	82 16 47.3	4,546
T road southwest, 20 feet south to L. G. Mosley's mail box	32 59 01.2	82 15 47.0	5,815

Along highways near west border of quadrangle.

Louisville, T road west, 1.5 miles southwest of	32 59 54.5	82 25 46.9	.....
Three corners, 50 feet southwest to mail box 30	32 58 50.8	82 26 41.6	7,954
Small brick bridge	32 57 33.8	82 27 48.1	9,630
T road west at house on east side of road	32 56 16.5	82 28 08.3	7,994
Crossroads at north edge of woods	32 55 31.8	82 28 20.1	4,635
Brick culvert, 150 feet south to sign "Bartow 2 miles"	32 54 25.4	82 28 24.5	6,716
Bartow, 1 mile north of, forks of road	32 53 31.2	82 28 20.4	5,494
Bartow, 350 feet south of station, on west side of railroad, 3 feet north of crossing sign; iron post stamped "Prim. Trav. Sta. No. 27, 1918 H"; 710 feet south is nail in hub on west side of road, azimuth, 12° 08′ 50″; 591 feet southeast is point on south rail of railroad, azimuth, 323° 14′ 30″	32 52 42.4	82 28 28.5	4,977

Along Central of Georgia Ry. near center of quadrangle.

Milepost 110, railroad track opposite	32 52 11.2	82 27 35.5	5,509
Milepost 109, railroad track opposite	32 51 52.9	82 26 37.11	5,310
Road crossing, 20 feet northeast to crossing sign	32 51 42.4	82 25 53.1	3,900
Wadley, 30 feet south of main line, 100 feet east of station; iron post stamped "Prim. Trav. Sta. No. 31, 1918 H"; 300 feet east is point on south rail of main line; azimuth, 261° 54′ 20″; 290 feet west is point on south rail of main line, azimuth, 96° 28′ 30″	32 51 42.6	82 24 15.6	8,316
Milepost 106, railroad track opposite	32 51 43.6	82 23 32.9	3,638
House on north side of railroad, road crossing at	32 51 44.7	82 22 08.9	7,161
Milepost 104, road crossing 100 feet east of	32 51 45.3	82 21 27.3	3,550
Milepost 103, railroad track opposite	32 51 44.8	82 20 26.7	5,163
Road crossing, plank bridge approach north and south	32 51 31.6	82 19 50.4	3,369
Ogeechee River, sign on bridge, railroad track opposite	32 51 13.3	82 19 07.7	4,080
Jefferson-Burke county line, railroad track on	32 50 59.8	82 18 36.4	3,000
Road crossing at station	32 50 41.3	82 17 53.1	4,141
Brick retaining wall on south side of railroad, road crossing at	32 50 17.2	82 16 57.0	5,360
Midville, second-class road crossing 1 mile west of	32 49 23.2	82 15 05.7	10,955

Along highways near west border of quadrangle.

South Bartow, three corners at, 100 feet southwest to shop	32 52 07.4	82 28 42.1	.....
South Bartow, 5 miles south of, three corners	32 51 40.2	82 28 49.5	2,720
Crossroads	32 50 51.2	82 28 50.9	4,992
T road east, 350 feet north to house on east side of road	32 49 47.6	82 28 46.9	6,438
Crossroads, 5 mail boxes at northwest corner	32 48 28.0	82 29 00.2	8,114
Crossroads, 70 feet southeast to three mail boxes	32 47 40.6	82 29 00.1	4,794
Forks of road, 30 feet south to three mail boxes	32 46 41.4	82 28 52.1	6,022
T road east, 20 feet west to two mail boxes	32 45 40.4	82 28 48.7	6,170
Wiggin's crossing, 40 feet southeast of intersection; iron post stamped "Prim. Trav. Sta. No. 28, 1918 H"; 1,200 feet east is nail in hub on north side of road, azimuth, 278° 56′ 00″	32 45 03.0	82 28 55.4	3,826

WADLEY QUADRANGLE—Continued.

Along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Three corners, 200 feet east to house	32 45 42.3	82 18 29.5	.....
Second-class road to southwest, 400 feet southeast to house	32 45 13.9	82 17 29.3	5,887
Crossroads, 300 feet west to church	32 45 05.8	82 15 45.6	.....
Railroad crossing	32 46 08.9	82 15 04.9	7,264

Magnetic declination for north edge of quadrangle, 1° 13′ E.; for west edge of quadrangle, 1° 18′ E.; for south edge of quadrangle, 0° 50′ E.; for east edge of quadrangle, 0° 52′ E.

West from Bartow along highways. (By E. L. McNair in 1918.)

Bartow, Hawkins's Prim. Trav. Sta. No. 27	32 52 42.4	82 28 28.5	.....
Road forks	32 52 27.0	82 28 36.8	1,711

Magnetic declination for west part of quadrangle, 1° 18′ E.

Along highways near southwest corner of quadrangle.

T road south	32 45 14.3	82 29 44.3	.....
Iron post No. 28, 1918 (Hawkins) at Wiggins crossroads; also station No. 2950, book 10, page 1	32 45 03.0	82 28 55.4	4,339

Along Central of Georgia Ry.

Bartow, post No. 27, H 1918	32 52 42.4	82 28 28.5	.....
Milepost A182	32 53 23.4	82 28 59.3	4,910
Second-class road crossing	32 54 05.2	82 29 40.8	5,519

Magnetic declination for southwest part of quadrangle, 1° 08′ E.

WARRENTON QUADRANGLE.

Along highways near east border of quadrangle. (By G. T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Thomson railroad station, track opposite semaphore	33 27 56.9	82 30 07.4	.....
Hobbs Mill, 3 miles southwest of three corners, 70 feet northwest to house	33 20 50.8	82 30 25.8	.....
White house, road opposite entrance	33 20 33.0	82 30 56.4	3,167
T road northwest in front of house, 60 feet northwest to mail box 27	33 20 10.9	82 32 13.1	6,880
Crossroads 50 feet north to old two story house	33 19 38.2	82 33 36.8	7,828
Railroad station, railroad crossing 800 feet east of	33 19 01.2	82 33 30.6	3,778
Schoolhouse, on east side of road, road opposite	33 18 24.9	82 33 47.2	3,927
David McGaff's cabin, road opposite	33 16 46.8	82 33 35.8	10,082
Gibson, 3 miles northeast of, near crossroads, 400 feet southeast of Bill Willford's house, 20 feet northwest to crossroads; iron post stamped "Prim. Trav. Sta. No. 21, 1918 H"; 385 feet north to nail in hub on west side of road, azimuth, 184° 22′ 50″	33 15 54.4	82 33 20.9	5,301
Sawmill, center of bridge at	33 15 24.5	82 32 47.3	4,158

Magnetic declination for east border of quadrangle, 1° 20′ E.

WARRENTON QUADRANGLE—Continued.

Southeast along railroad from Belle Springs. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	°′″	°′″	Feet.
Belle Springs station, about 900 feet southwest of, road crossing	33 15 34.14	82 39 33.8	.....
Intersection of railroad tangents, angle 18° 50′	33 15 31.0	82 39 02.6	2,667
Intersection of railroad tangents, angle 4°	33 15 11.9	82 38 33.6	3,121
West along Georgia R. R. near north border of quadrangle.			
Thomson station, 150 feet west of, street crossing	33 27 56.3	82 30 09.4	.....
Public-road crossing	33 27 28.8	82 31 41.4	8,270
Do	33 27 05.7	82 32 58.7	6,950
Do	33 26 58.8	82 33 21.7	2,070
Do	33 26 52.1	82 34 18.4	4,845
Mesena, road crossing	33 27 34.8	82 35 25.9	7,169
Third-class road crossing	33 27 44.8	82 36 12.3	4,060
Second-class road crossing	33 27 52.8	82 37 00.7	4,174
Road crossing	33 28 05.3	82 37 52.6	4,575
Do	33 27 48.2	82 38 04.2	1,207
Do	33 27 22.5	82 38 34.4	4,425
Camak station, about 350 feet northeast of, 40 feet northeast of water tank, on bank 7 feet above track, about 67 feet southeast of center of track, in line of tangent extending N. 26° E.; iron post stamped "Prim. Trav. Sta. No. 153, 1918 Mac."; azimuth to Methodist Episcopal Church spire, 233° 59′	33 27 11.8	82 38 43.4	1,318
Public-road crossing	33 26 59.4	82 39 32.5	4,343
Do	33 27 05.4	82 39 49.6	1,560
Farm-road crossing	33 27 13.2	82 40 37.1	4,103
Public-road crossing	33 27 25.6	82 41 48.5	6,180
Norwood, 75 feet north of, road crossing	33 27 44.2	82 42 21.3	3,350
Farm-road crossing	33 28 06.1	82 43 00.1	3,960
Public-road crossing	33 28 30.0	82 43 42.3	4,315
Do	33 28 42.1	82 44 07.9	2,488
Road crossing	33 28 47.8	82 44 55.2	4,042
South along Georgia R. R. and highways near center of quadrangle.			
Camak, Prim. Trav. Sta. No. 153 (previously described)	33 27 11.8	82 38 43.4	.....
Public-road crossing	33 26 44.0	82 39 04.8	3,351
Intersection of tangents, angle of 8°	33 26 28.2	82 38 57.7	1,710
Second-class road crossing	33 25 46.6	82 38 46.5	4,300
Public-road crossing	33 25 09.0	82 38 53.5	3,856
Road crossing	33 24 49.3	82 39 21.2	3,070
Warrenton station, 70 feet N. 60° W. from, 2 feet south of metal crossing-sign post, 35 feet north of center of main track; iron post stamped "Prim. Trav. Sta. No. 154, 1918 Mac."; azimuth to right hand edge of chimney on house seen just by corner of station, 311° 27′ 50″; azimuth to right hand edge of west chimney, 14° 10′ 50″	33 24 34.8	82 39 47.0	2,636
Fork of road	33 23 44.5	82 39 38.8	5,132
Creek crossing	33 23 28.2	82 39 30.2	1,792
Road fork	33 22 47.1	82 39 15.3	4,349
Second-class road east	33 22 18.1	82 39 07.5	3,000
Creek crossing	33 21 49.9	82 39 00.3	2,924
Fork of road, N. 72° E., 100 feet from road southwest	33 21 19.8	82 38 28.7	4,056
Road fork at church	33 20 40.2	82 38 00.4	4,658
Warrenton, 5.5 miles south of, 3,500 feet south of church, at fork of road, nearly in line with road south, 15 feet southwest of road southeast; iron post stamped "Prim. Trav. Sta. No. 155, Mac. 1918"; azimuth to west edge of brick chimney on house 1,000 feet distant, 136° 15′ 40″	33 20 10.9	82 37 37.7	3,536
Fork of road	33 19 28.8	82 38 05.3	4,856
Rocky Comfort Creek, main channel near east end of bridge	33 18 28.6	82 37 33.4	6,663
Angle in road, directly in front of house	33 18 08.9	82 38 25.6	4,856
Crossroads	33 17 15.2	82 39 43.6	8,562
Fork of road	33 16 43.4	82 39 18.6	3,857
Belle Springs station, 900 feet southwest of, road crossing	33 15 34.1	82 39 33.8	7,116
Center of track of Georgia R. R., opposite milepost 55	33 15 20.8	82 39 45.5	1,679

Magnetic declination near middle of quadrangle, 1° 10′ E.; along north border of quadrangle, 1° 08′ E.

WARRENTON QUADRANGLE—Continued.

From Warrenton along Georgia R. R.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Warrenton station; iron post stamped "Prim. Trav. Sta. No. 154, 1918" (previously described)	33 24 34.8	82 39 47.0	.....
Second-class road crossing under railroad	33 24 24.3	82 40 08.0	2,074
Second-class road crossing	33 23 57.7	82 41 03.6	5,435
Road crossing	33 23 18.5	82 42 25.7	8,010
Public-road crossing	33 22 55.5	82 43 13.8	4,700
Second-class road crossing	33 22 05.3	82 44 09.8	6,956
Road crossing	33 21 56.5	82 44 51.1	3,619
Small creek crossing, bridge over	33 17 04.1	82 44 54.6	.....
Public crossroads	33 17 36.1	82 44 40.5	3,441
Fork of road, 25 feet west of oak tree	33 15 25.6	82 44 30.3	.....
Angle in road, 47° 40′, center line both ways	33 15 10.2	82 44 18.9	1,843
(By G. T. Hawkins in 1918.)			
Thomson, 1 mile north of, road forks	33 28 53.3	82 30 15.9	.....

WAYCROSS QUADRANGLE.

Southwest and northwest along Atlanta, Birmingham & Atlantic Ry. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
South end of trestle at pump house	31 14 14.5	82 19 24.8	.....
Road crossing	31 13 39.3	82 20 09.1	5,230
Do	31 12 56.1	82 21 03.5	6,430
Waycross, 1,900 feet northeast of station, on Atlantic Coast Line R. R., in city of Waycross, 85.82 feet south of south rail of Plant Avenue street car track, 138 feet west from middle of Albany Avenue, 20.8 feet north of north rail of main track leading to Savannah, 122.3 feet south from south corner of Florence Hotel. Station mark: Tablet set in top of concrete post (Plant traverse station by U. S. C. & G. S., azimuth to center pole with balloon top on tower of Union Station, 47° 45′ 30″	31 12 46.25	82 21 16.25	1,476
Waycross, road crossing at junction of Atlanta, Birmingham & Atlantic and Atlantic Coast Line railroads	31 12 53.1	82 21 39.8	2,161
Road crossing	31 14 08.4	82 22 12.5	8,119
Do	31 14 41.1	82 22 24.8	3,470
Waycross, 6 miles east of, 1,230 feet west of road crossing at turpentine still, 85 feet north of railroad track, 25 feet north of wagon road, 60 feet south of a schoolhouse for negroes; iron post stamped "Prim. Trav. Sta. No. 38, 1917 Mac."	31 11 06.0	82 15 30.8	.....
Private-road crossing	31 11 19.0	82 16 18.4	4,330
Road crossing	31 11 41.1	82 17 33.7	6,905
Do	31 11 48.9	82 18 00.3	2,440
Do	31 12 24.0	82 20 00.1	10,985
Waycross, street crossing	31 12 38.9	82 20 51.2	4,680
Waycross, 1,900 feet northeast of station, "Plant" U. S. C. & G. S. traverse station; azimuth to center pole with balloon top on tower of Union Station, 47° 45′ 30″	31 12 46.25	82 21 16.25	2,291

From Waycross southwest along Atlantic Coast Line R. R. to west border of quadrangle. (By E. L. McNair in 1917.)

Waycross, about 1,900 feet northeast of, Plant traverse station of U. S. Coast and Geodetic Survey (previously described)	31 12 46.25	82 21 16.25	.....
Milepost 98	31 11 37.2	82 22 42.7	10,249
Road crossing, near switch stand at southwest end of long siding, 1,055 feet northeast of milepost 99	31 11 08.9	82 23 18.4	4,220
Intersection of Atlantic Coast Line R. R. with lumber railroad to Okefenokee Swamp	31 10 27 1	82 24 11.0	6,220
Road crossing, 1,540 feet northeast of milepost 101	31 10 01.2	82 24 43.6	3,860
Road crossing, 880 feet northeast of milepost 102	31 09 26.1	82 25 38.1	5,913
Road crossing, 1,910 feet northeast of another road crossing	31 09 13.5	82 26 11.6	3,170
Ruskin, 900 feet southwest of station, 30 feet northwest of center of track, 6 feet northeast of milepost S 103; iron post stamped "Prim. Trav. Sta. No. 39, Mac. 1917"; azimuth to semaphore post at station just below arms, 247° 31′ 15″	31 09 01.9	82 26 43.3	2,994
Milepost 104	31 08 40.7	82 27 38.5	5,254
Road crossing near switch stand of turnout	31 08 05.4	82 29 12.0	8,875

WILCOX QUADRANGLE.

Northwest along Atlanta, Birmingham & Atlantic Ry. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	31 30 01.2	82 33 43.7	.....
Do	31 30 15.8	82 34 01.2	2,115
Sessoms, junction point	31 30 56.3	82 35 04.1	6,807
Sessoms, 3 feet east of southeast corner of freight house, 30 feet north of track; iron post stamped "Prim. Trav. Sta. No. 17"; azimuth of station 129 to post, 180° 45′ 30″	31 30 56.6	82 35 04.0	30

West along northern branch of Atlanta, Birmingham & Atlantic Ry.

Road crossing	31 32 50.1	82 30 08.0	.....
Do	31 32 49.4	82 30 22.1	1,220
West end of trestle	31 32 46.9	82 31 07.5	3,930
Road crossing	31 32 45.5	82 31 32.4	2,161
Guysie, road crossing at	31 32 39.3	82 31 52.9	1,879
East end of trestle	31 32 13.4	82 32 39.4	4,800
Road crossing at old sawmill	31 31 53.9	82 33 14.3	3,600
Road crossing	31 31 37.2	82 33 44.3	3,100
Do	31 31 05.3	82 34 41.5	5,900
Sessoms, junction point	31 30 56.3	82 35 04.1	2,157

From Sessoms west along Atlanta, Birmingham & Atlantic Ry. near south border of quadrangle. (By Oscar Jones in 1917.)

Sessoms, Prim. Trav. Sta. No. 17 (previously described)	31 30 56.3	82 35 04.0	.....
Bacon-Coffee county line, crossing of	31 30 54.2	82 35 48.6	3,860
Road crossing	31 30 53.4	82 36 07.6	1,640
Do	31 30 52.0	82 36 37.6	2,600
Nicholls, road crossing	31 30 53.7	82 38 05.2	7,579
East end of trestle	31 30 55.6	82 38 46.6	3,590
Road crossing	31 30 56.5	82 39 04.7	1,560
Do	31 30 56.0	82 40 10.5	5,696
Do	31 30 50.4	82 41 15.0	5,610
Road crossing at school	31 30 46.4	82 42 00.1	3,920
Road crossing	31 30 41.0	82 43 01.2	5,310
Do	31 30 38.5	82 43 29.6	2,470
Chatterton, north side of track, 2 feet east of milepost 90; iron post stamped "Prim. Trav. Sta. No. 20, J 1917"	31 30 35.4	82 44 05.7	3,141
Switch	31 30 19.4	82 44 42.6	3,578

From west border of quadrangle northeast along Georgia Southern & Florida Ry. to north border of quadrangle.

Road crossing	31 35 48.1	82 44 50.6	.....
Do	31 36 17.5	82 44 09.3	4,648
West Green, 65 feet west of northwest corner of station; iron post stamped "Prim. Trav. Sta. No. 22, J 1917"	31 36 48.8	82 43 52.3	3,493
Road crossing at sawmill, 100 feet south of switch	31 37 15.0	82 43 50.7	2,648
Road crossing	31 37 58.9	82 43 49.2	4,440
Do	31 38 44.4	82 43 46.5	4,603
Do	31 39 21.1	82 43 20.7	4,339
Lehigh, at road crossing	31 39 53.2	82 42 56.8	3,840
Crossing of Coffee-Jeff Davis county line	31 40 17.5	82 42 38.6	2,920
Road crossing at water tank	31 40 38.3	82 42 25.8	2,377
Road crossing	31 41 11.2	82 42 21.7	3,340
Do	31 42 04.3	82 42 15.1	5,400
Do	31 42 51.0	82 42 05.9	4,775
Denton, 100 feet north of station, road crossing	31 43 13.7	82 41 52.1	2,599
End of trestle	31 43 58.0	82 41 24.6	5,070
Road crossing	31 44 33.4	82 41 10.5	3,784

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WINOKUR QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost "Port Tampa 302", opposite	31 00 46.1	82 01 36.2	.....
Winokur, switch stand at south end of siding	31 01 49.5	82 01 22.3	6,525
Winokur station, 325 feet north of, opposite switch stand at north end of siding, 80 feet west of center of track, 3.5 feet east of garden fence; iron post stamped "Prim. Trav. Sta. No. 6, 1917 Mac"; azimuth to switchstand, 4° 31′ 45″	31 02 21.3	82 01 16.3	3,246
Road crossing, center of track at	31 02 57.1	82 01 07.6	3,702
Do	31 03 36.8	82 00 59.0	4,075
Public-road crossing, center of track at	31 04 28.9	82 00 47.6	5,355
Milepost "Savannah 94", 935 feet south of, road crossing	31 05 12.0	82 00 38.2	4,435
Bachlatt spur, 40 feet south of switch stand, road crossing	31 05 36.8	82 00 32.8	2,545
Milepost "Savannah 92", 675 feet south of, public-road crossing, center of tracks	31 06 52.2	82 00 16.4	7,750
Public-road crossing, center of track at	31 07 24.1	82 00 09.5	3,275
Shea siding, switch stand at north end of	31 08 00.4	82 00 01.6	3,736

Magnetic declination for line, 0° 51′ E.

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Road crossing	31 12 00.9	82 00 35.3	.....
Do	31 11 54.5	82 01 19.4	3,890
Public-road crossing	31 11 43.7	82 02 32.8	6,466
Milepost 40	31 11 39.7	82 03 00.3	2,425
Road crossing	31 11 32.3	82 03 51.1	4,475
Milepost 42	31 11 22.1	82 05 00.4	6,105
Milepost 43	31 11 13.4	82 06 00.2	5,270
Private-road crossing	31 11 06.1	82 06 49.3	4,330
Hoboken station, 300 feet east of, 50 feet north of center of track, in line with road north; iron post stamped "Prim. Trav. Sta. No. 37, 1917 Mac."; azimuth to church steeple, 345° 30′ 30″	31 10 56.4	82 07 51.8	5,514
Hoboken, 50 feet west of road crossing, in center of main track; nail in tie	31 10 56.3	82 07 56.2	378

Along highways near center of quadrangle.

Second-class road southeast at corner of field	31 09 17.5	82 07 55.2	9,985
T road east	31 08 12.6	82 07 54.5	6,560
Angle in road	31 07 40.5	82 07 53.8	3,240
Angle in road, at north end of lane	31 06 38.9	82 08 29.6	6,959
Intersection of north and south road with a new graded road but little used, going N. 48° 30′ E	31 06 17.8	82 08 41.1	2,354
Crossroads	31 05 43.0	82 08 35.8	3,547
Second-class crossroad	31 04 59.8	82 08 23.5	4,498
Near bend in road; 35 feet west of road, 2 feet west of pine tree blazed and marked "U. S." in red; two wire nails in root	31 03 48.7	82 07 42.0	8,044
Fork in road	31 02 28.0	82 07 16.9	8,436
Fork in road, 15 feet northeast to rail fence at southwest corner of field	31 01 25.6	82 07 26.9	6,366
Crossroads, road north and south	31 00 25.2	82 07 15.3	6,190

Along highways near south border of quadrangle.

Lone cypress tree, 50 feet south of roadway, blazed and marked "U. S." in red; two wire nails in root	31 00 59.2	82 06 28.4	5,341
Gateway in north and south fence through which road passes, center of	31 01 49.2	82 04 21.8	12,106
Fork in road	31 02 19.2	82 02 47.5	8,739
Second-class crossroads	31 02 27.5	82 02 22.9	2,294
Bridge over large drainage ditch	31 02 20.4	82 01 44.0	3,440
Winokur, "Prim. Trav. Sta. No. 6, 1917 Mac" (previously described)	31 02 21.3	82 01 16.3	2,396

Spur line to U. S. Coast and Geodetic Survey traverse station Race Pond.

Race Pond railroad station, center of track of Atlantic Coast Line R. R. at road crossing	31 00 09.4	82 07 49.9	.....
Race Pond station, 1,500 feet north of, at intersection of railroad tangents, in ditch on east side of track, in top of concrete block; tablet marked C. & G. S. station Race Pond	31 00 23.48	82 07 55.30	1,499

Magnetic declination for south border of quadrangle, 1° 09′ E.; north and south near center of quadrangle, 1° 03′ E.

WINOKUR QUADRANGLE—Continued.

Along Atlantic Coast Line R. R. from Hoboken west. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	°œ′ ″	*Feet.*
Station 1319=station 1272	31 10 56.3	82 07 56.2	.....
Road crossing	31 10 50.5	82 08 35.7	3,480
Do	31 10 47.4	82 08 57.2	1,885
Do	31 10 38.6	82 09 56.7	5,240
Do	31 10 32.2	82 10 40.4	3,845
East end of trestle 400 feet long	31 10 27.8	82 11 10.5	2,650
Schlatterville, road crossing	31 10 20.4	82 12 00.6	4,410
Private-road crossing	31 10 16.2	82 14 06.5	10,939

WRIGHTSVILLE QUADRANGLE.

South along Wrightsville & Tennille R. R. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	32 44 55.6	82 43 02.2	.....
South end of trestle at creek crossing	32 44 30.4	82 43 01.0	2,542
Wrightsville station, 675 feet southwest of, 20 feet southeast of center of track at point 107 feet southwest of switch stand, in line with fence line looking south, on west side of street about 18 feet east of center of street, in small bank; iron post set flush with surface of ground, stamped "Prim. Trav. Sta. No. 141, 1918 Mac."; azimuth to tower on brick high school, 47° 47′ 15″; azimuth to lightning rod in hand of statue on courthouse, 156° 32′ 15″	32 43 36.2	82 43 04.0	5,486
Road crossing, private	32 42 57.7	82 43 33.1	4,612
Road crossing, public	32 42 24.6	82 43 47.8	3,579
Do	32 41 40.4	82 43 51.9	4,477
Do	32 40 52.2	82 44 32.9	6,003
East along highways from Meadows.			
Crossroads	32 39 48.4	82 44 33.7	.....
Road north	32 39 45.2	82 43 48.9	3,847
Road forks	32 39 31.9	82 43 10.6	3,544
Public crossroads	32 39 41.2	82 42 13.2	4,997
Road crossing, second class	32 39 33.6	82 41 50.3	2,105
T road southwest, second class	32 39 09.5	82 41 02.5	4,757
Road forks	32 38 59.4	82 40 16.0	4,112
Ohoopee River, bridge over	32 39 22.0	82 39 57.4	2,780
Spann post office, 6.5 miles southeast of, 0.75 mile east of crossing of Ohoopee River, 20 feet east of T road corners at road north to Bartow, 15 feet north of east and west road; iron post stamped "Prim. Trav. Sta. No. 146, 1918 Mac"	32 39 43.8	82 39 26.5	3,442
T road north, second class	32 39 28.6	82 38 36.0	4,586
Center of creek at ford	32 38 59.5	82 37 11.2	7,821
Center of creek bridge	32 38 51.9	82 36 26.3	3,924
Road forks, just east of small creek	32 38 39.9	82 34 53.7	8,011
Road fork	32 38 21.9	82 33 36.1	6,883
T road east	32 38 11.5	82 33 30.4	1,160
Meeks station on Wadley Southern Ry., 330 feet south of, in line of west rail looking north, 20 feet west of center of track; iron post stamped "Prim. Trav. Sta. No. 136, 1918 Mac."; azimuth to right-hand edge of brick chimney on house 150 feet distant, 326° 34′ 03″	32 37 02.1	82 33 23.3	7,046
Road forks at point of separation of wagon tracks	32 37 25.2	82 32 39.1	4,448
T road south	32 37 40.2	82 31 31.1	6,010
Sardis Church, 0.8 mile west of, at crossroads	32 37 51.4	82 30 44.2	4,175

Magnetic declination for east border of quadrangle, 1° 21′ E.

South along highways near east border of quadrangle.

Ohoopee River, center of stream	32 41 46.4	82 30 15.0	.....
Kite station, public-road crossing of Wadley Southern Ry	32 41 25.1	82 30 50.7	3,727
Fork of road	32 41 01.0	82 30 37.4	2,691
Small stream ford	32 40 26.0	82 30 13.0	4,106
Road west to house	32 39 50.5	82 30 19.0	3,626
T road west	32 39 01.4	82 30 25.2	4,989
Fork of road	32 38 25.4	82 30 36.4	3,754
Sardis Church, 0.8 mile west of, crossroads	32 37 51.4	82 30 44.2	3,503

Magnetic declination along east border of quadrangle, 1° 04′ E.

WRIGHTSVILLE QUADRANGLE—Continued.

East along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Wrightsville station, about 675 feet southwest of, "Prim. Trav. Sta. No. 141, 1918 Mac." (previously described)	32 43 36.2	82 43 04.0	.....
Forks of road	32 43 50.0	82 42 39.3	2,533
Do	32 44 02.7	82 42 21.3	2,008
Little Cedar Creek, bridge over	32 44 00.0	82 41 31.3	4,284
Forks of road, 20 feet from end of bridge	32 43 55.5	82 40 11.6	6,828
Forks of road	32 43 47.8	82 39 24.2	4,128
Crossroads	32 43 35.9	82 38 21.4	5,504
Do	32 43 39.6	82 36 47.0	8,074
T road south	32 43 44.8	82 36 17.4	2,584
Do	32 43 51.2	82 35 29.4	4,156
Second-class road north	32 43 59.3	82 34 59.2	2,717
Wrightsville, 9 miles east of, 3 miles west of gum log bridge, on road from Wrightsville to Tom, about 1 mile west of Powell's store, 30 feet west and 25 feet north of crossroad, on bank, in line with east end of house 250 feet south; iron post stamped "Prim. Trav. Sta. No. 143, 1918 Mac."; azimuth to chimney on west end of house 1,500 feet distant, 340° 05′ 30″	32 44 15.9	82 34 08.8	4,625
Second-class crossroads	32 44 15.3	82 33 41.0	2,380
Public T road north	32 44 12.7	82 32 28.6	6,190
Forks of road	32 43 50.0	82 31 23.5	6,020

Magnetic declination for north border of quadrangle, 1° 09′ E.

West along roads near north border of quadrangle.

Wrightsville station, about 675 feet southwest of, "Prim. Trav. Sta. No. 141, 1918 Mac." (previously described)	32 43 36.2	82 43 04.0	.....
Forks of road at cemetery	32 43 45.1	82 43 55.5	4,490
Forks of road	32 44 24.2	82 44 52.5	6,271

Magnetic declination for north border of quadrangle, 1° 04′ E.

WYLEY QUADRANGLE.

(By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Meadows station (Spann post office), about 190 feet S. 53° W. from road crossing at, 53 feet northwest from center of railroad track, at south end of advertising billboard, 10 feet southwest of telephone post; iron post stamped "Prim. Trav. Sta. No. 142, 1918 Mac."; azimuth to left edge of chimney on north end of house, about 0.5 mile distant, 42° 24′ 02″	32 39 53.2	82 45 00.1	.....

West along roads.

Creek crossing, 65 feet west of end of bridge	32 44 12.6	82 45 52.0	.....
Crossroads	32 44 07.6	82 46 36.8	3,870
T road north	32 44 08.6	82 47 07.2	2,600
T road south	32 44 11.9	82 47 48.2	3,525
Forks of road	32 44 21.3	82 48 26.4	3,400
Crossroads	32 44 12.0	82 48 56.8	2,770
Creek crossing, bridge over	32 44 24.7	82 50 03.8	5,865
Forks of road, road southwest	32 44 24.2	82 50 29.2	2,179
T road corners, north, south, and east	32 44 19.1	82 51 17.9	4,191
Wrightsville, 8.5 miles west of, 115 feet S. 48° W. from Tarbutton's store, 40 feet north of center of road west to Kittrell, 60 feet west of corner fence post, 15 feet west of center of north and south road; iron post stamped "Prim. Trav. Sta. No. 145, 1918 Mac."; azimuth to right-hand edge of brick chimney on north end of Mr. Tarbutton's house, about 1,100 feet south, 1° 17′ 26″	32 44 28.7	82 51 19.1	980
Forks of road	32 44 30.4	82 52 00.1	3,513
West end of long bridge	32 44 14.1	82 53 16.7	6,752
Crossroads	32 43 59.3	82 54 32.7	6,666
Forks of road, 50 feet north of creek	32 44 28.5	82 55 17.0	4,803
Forks of road	32 44 58.1	82 55 34.2	3,332

Magnetic declination for quadrangle, 1° 12′ E.

IDAHO.

TRIANGULATION STATIONS.

Bay Horse, Crooks, Custer, and Mackay quadrangles.

CUSTER COUNTY.

The following geographic positions on approximate North American datum result from triangulation by T. M. Bannon in 1914–1915. They are supplemental to positions published on pages 179–220 of Bulletin 644.

ALDER KNOB, CUSTER COUNTY, IDAHO. (Not occupied.)

A prominent, square-looking, rocky knob on the divide between the waters of Alder, Cherry, and Antelope creeks, 6 miles a little east of south of Mackay town, 5 miles north of Grouse post office on Antelope Creek.

Station mark: Tallest tree.

[Latitude 43° 46′ 52.21″ Longitude 113° 35′ 02.09″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Smiley			4.30696	12.60
Shelly	114 04 32.4	293 58 29.4	4.09600	7.75
Mackay	142 23 25.7	322 18 36.9	4.18309	9.47
Crawford			4.04170	6.84

BIG BLACK DOME, CUSTER COUNTY, IDAHO. (Not occupied.)

A big, dome-shaped mountain, very prominent, on the north end of the divide between Star Hope and Fall creeks, about 3 miles south of the East Fork of Salmon River and about 10 miles west of Reed & Davis Copper Camp in Copper Basin.

Station mark: Highest point of mountain.

[Latitude 43° 49′ 22.70″ Longitude 113° 58′ 45.85″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Porphyry			4.08568	7.57
Shelly	268 40 56	88 51 29	4.31000	12.661
Smiley	314 54 06	135 01 10	4.28679	12.03

BIRDIE, CUSTER COUNTY, IDAHO. (Not occupied.)

On a flat, low, grassy hill between Sheep and Warm Springs creeks, 12 miles southeast of Challis City. The hill is between the present Challis-Mackay stage road up Warm Springs Creek and the old stage road over Lone Pine divide and down Sheep Creek.

Station mark: Center of the sheep herder's monument

[Latitude 44° 21′ 17.26″. Longitude 114° 07′ 06.04″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Klug	134 02 20	313 55 52	4.23264	10.62
Challis	147 31 25	327 25 21	4.33034	13.30
Grouse	184 41 07	04 42 08	4.37163	14.62
Anderson			4.28734	11.80
Spar			4.11308	8.06

BLACK NOSE, BLAINE COUNTY, IDAHO. (Not occupied.)

On a black rocky knob at east end of grassy ridge on divide between West Fork of Fish Creek and Muldoon Creek drainage, 0.5 mile south of wagon road in pass, near head of Trail and West Fork of Fish creeks. Two miles northeast of Laidlows big ranch on Muldoon Creek and about same distance west of Wards ranch on West Fork of Fish Creek. Easily reached from all directions.

Station mark: Center of sheep herder's monument.

[Latitude 43° 29′ 11.90″. Longitude 113° 52′ 21.57″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Scorpion	176 32 42.22	356 32 12.10	4.21110	10.10
Freedom			3.40733	1.59
Blizzard	265 14 14.91	85 22 42.43	4.22075	10.33

BRIDGE, CUSTER COUNTY, IDAHO.

On a low, sagebrush hill south of Spar Creek and east of the East Fork of Salmon River. About 1 mile east of the East Fork bridge at the mouth of Spar Creek and Gossi ranch on the Clayton-Mackay wagon road.

Station mark: A chiseled cross on solid rock under a rock monument.

Reference mark: The small iron section corner post between sections $\frac{6}{7}$, T. 10 N., R. 19 E., 347 feet, true azimuth 322° 03′ 24″.

[Latitude 44° 13′ 11.44″. Longitude 114° 15′ 44.13″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Redwings			4.27620	11.74
Potaman	90 45 21	270 39 45	4.02891	6.64
Ram	158 30 41	338 27 17	4.24692	10.97

CABIN CREEK PEAK, CUSTER COUNTY, IDAHO. (Not occupied.)

On a high, rocky, prominent peak on the divide between drainage of the West Fork of Yankee Fork and the Middle Fork of Salmon River. Ten miles a little north of west from Bonanza post office. About 3 miles north of Hyndman Lake. The trail from Bonanza to Cape Horn ranger station up the West Fork crosses the divide 2 miles south of the peak.

Station mark: None (highest point).

[Latitude 44° 24′ 30.44″. Longitude 114° 53′ 50.42″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
The General			4.05344	7.07
Mount Jordan			4.06716	7.25
Bonanza	288 52 50.5	109 01 31.4	4.24131	10.83
McGowan	330 02 06.5	150 04 23	3.93735	5.38

CASTLE PEAK, CUSTER COUNTY, IDAHO. (Not occupied.)

The east end of the highest peak in Idaho, locally known as Castle Peak. Several forks of the East Fork of Salmon River head around the east foot of the peak. About 15 miles southwest of Clayton post office. The foot of the peak can easily be reached from the road and trail up East Fork of Salmon River. Can only be ascended by a long difficult climb afoot. The peak has a very sharp appearance from the northeast and southwest directions; from other directions it shows more as a ridge with three small tops. Sighted the east end, which is a few feet lower than the center.

Station mark: None (east end).

[Latitude 44° 02′ 24.45″. Longitude 114° 35′ 05.27″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ram	207 50 43	28 00 48	4.61481	25.59
Spar			4.62368	26.12
Anderson			4.68350	29.98
Redwings	261 14 38	81 24 02	4.26168	11.35

CHALLIS CITY HILL, CUSTER COUNTY, IDAHO.

Located from one triangle on a low isolated hill less than 0.25 mile south of McGowan's store on the same street extended. McGowan's store is at the intersection of the two main streets of Challis City.

Station mark: A triangulation tablet set in solid rock under a small monument.

[Latitude 44° 28′ 48.68″. Longitude 114° 12′ 46.76″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Klug	66 31 13	246 28 43	3.71417	3.22
Grouse	224 45 13	44 50 13	4.12741	8.33

CLARK, CUSTER COUNTY, IDAHO.

On the slope of a small hill less than 0.25 mile south of Joe Clark's house on the East Fork of Salmon River. One mile northwest of the East Fork bridge and Gossi ranch on the Clayton-Mackay wagon road. Two miles southeast of the forks of the Clayton-Mackay and the Clayton-Challis wagon roads. Over iron post marked 35, which is at quarter-section corner on the township line between Tps. 10 and 11 N., R. 18 E.

Station mark: The small iron quarter-section corner post in small pile of rock.

[Latitude 44° 14′ 58.18″. Longitude 114° 18′ 7.02″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ram	167 33 55	347 32 11.2	4.18597	9.54
Bridge			3.54200	2.16
Gossi	299 04 26	119 06 34	3.66988	2.91

CRIMSON (RED MOUNTAIN), CUSTER COUNTY, IDAHO. (Not occupied.)

Highest point of Red Mountain, a prominent red mountain on the north side of the West Fork of the Yankee Fork of Salmon River. Six miles northwest of Bonanza post office. The trail from Bonanza to Cape Horn ranger station up West Fork passes about 2 miles south of the mountain.

Station mark: A small rock pile on the highest point.

[Latitude 44° 24′ 22.84″. Longitude 114° 51′ 45.72″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
The General			3.99513	6.14
Bonanza	291 30 47	111 38 01	4.16908	9.17
McGowan	347 51 40	167 52 30	3.87108	4.62

C. M. SMALL, CUSTER COUNTY, IDAHO.

On a partly timbered, grassy, dome-shaped hill on the north side of Salmon River on the ridge between Thompson Creek and Salmon River. Three miles northwest of C. M. Small's ranch on Salmon River, about 10 miles west of Clayton post office and 6 miles east of Robinson Bar Hotel on Warm Springs Creek. Easily reached from C. M. Small's ranch by crossing the Salmon River over his private bridge and across his meadow to the first dry gulch, about 0.25 mile west of Thompson Creek, thence by horse trail up the gulch to its head, and thence west along the ridge to the hill.

Station mark: A chiseled cross on placed rock centered under a rock monument and quadripod signal.

Reference mark: A chiseled cross on placed rock 15.3 feet west.

[Latitude 44° 16′ 30.00″. Longitude 114° 33′ 17.07″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Robinson Bar	62 40 16.7	242 32 30.2	4.22283	10.38
U. S. M. M. No. 3	74 23 51.7	254 18 52.6	3.99443	6.13
McGowan	107 46 08.3	287 34 03.3	4.38280	15.00
Ram	238 30 35.5	58 39 27.0	4.29576	12.28
Redwings	326 08 55.3	146 17 05.1	4.44847	17.45

CHASE, CUSTER COUNTY, IDAHO. (Not occupied.)

The highest point of the south of two peaks on the west side of Warm Springs Creek, 5 miles south of Robinson Bar Hotel on the stage road, at the junction of Warm Springs Creek and Salmon River. The north peak, Robinson Bar triangulation station, has a monument on it.

Station mark: None (highest point).

[Latitude 44° 11′ 35.16″. Longitude 114° 45′ 28.67″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McGowan	157 33 22	337 29 48	4.24990	11.08
Bonanza	196 24 16	16 27 06	4.27979	11.83
Robinson Bar			3.29750	1.23

CUSTER, CUSTER COUNTY, IDAHO. (Not occupied.)

On a hill on divide between Salmon River and Yankee Fork of Salmon River, at the heads of Five Mile, Thompson, and Peach creeks, about 5 miles southeast of Custer town and 4 miles a little south of east from Bonanza post office.

Station mark: Center of monument.

[Latitude 44° 20′ 59.1″. Longitude 114° 37′ 24.3″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Robinson Bar	30 20 15.29	210 15 21.06	4.26777	11.51
McGowan	86 52 34.93	266 43 22.18	4.24413	10.90
Bonanza			3.73366	3.37
The General			4.31431	12.84
Mount Eustes			4.10585	7.93

GOSSI, CUSTER COUNTY, IDAHO.

On a prominent, white, grassy, dome-shaped hill on ridge between Spar and Road Canyon creeks, about 1.5 miles southeast of Gossi ranch and the East Fork bridge on the Clayton-Mackey wagon road.

Station mark: A small rock buried under center of small monument.

[Latitude 44° 12′ 44.48″. Longitude 114° 15′ 02.91″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Redwings			4.26825	11.52
Potaman	94 48 09	274 42 05	4.06607	17.23
Ram	156 51 02	336 47 09	4.27358	11.67

HILSKIE, CUSTER COUNTY, IDAHO.

On a low, flat, sagebrush hill just south of the lowest saddle between McDonald and Taylor creeks, 6 miles south of the junction of McDonald Creek and Main East Fork of Salmon River, about 12 miles south of the East Fork Bridge, at the mouth of Spar Creek, on the Clayton-Mackay wagon road, 622.5 feet north and east of quarter-section iron post marked Sec. $\frac{27}{34}$. This iron section-corner post was poorly set and is liable to be destroyed, as it is in the center of the drag road that the ranchers use in getting out timber in the winter.

Station mark: Center of tall monument.

Reference mark: Small iron quarter-section corner post between secs. 27 and 34, T. 9 N., R. 18 E., 622.5 feet, true azimuth 55° 51′ 00″.

[Latitude 44° 04′ 27.11″. Longitude 114° 19′ 11.30″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Potaman	159 32 20.1	339 29 09.0	4.24102	10.82
Ram	176 41 54.5	356 40 55.2	4.51408	20.30
Lone Pine			4.51128	20.17

IRON, CUSTER COUNTY, IDAHO. (Not occupied.)

Highest point of square-looking peak in the Sawtooth Range.

[Latitude 44° 08′ 32.00″. Longitude 115° 00′ 33.54″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Prominent	188 51 33	08 55 28	4.68244	29.91
Eustes			4.61618	25.67
McGowan	210 57 41	31 04 38	4.41100	16.01
Trap	213 55 45	34 11 11	4,71913	32.54

LINE, CUSTER COUNTY, IDAHO. (Not occupied.)

A rocky-topped, detached, timbered hill on the west side of the mountains dividing the waters of Salmon and Pahsimeroi rivers. These mountains are the northwest extension of Big Lost River Range. The hill is very prominent and has a small red seam about at center of top. Easily reached from the Challis-Mackay stage road. About 15 miles southeast and visible from Challis City.

Station mark: Center of red spot.

[Latitude 44° 21′ 49.36″. Longitude 114° 00′ 02.45″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Anderson			4.26621	11.47
Spar	38 15 29	218 09 45	4.24691	10.97
Ram	91 02 35	270 48 13	4.43654	16.98
Grouse			4.37360	14.69

LOPE, CUSTER COUNTY, IDAHO. (Not occupied.)

On a low grassy hill on side ridge, west side of Antelope Creek. About 3 miles north of Grouse post office.

Station mark: Center of sheep herder's monument.

[Latitude 43° 45′ 00.75″. Longitude 113° 35′ 29.96″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Smiley	72 22 45	252 13 43	4.26500	11.44
Ante			4.13689	8.52
Shelly	128 22 19	308 16 45	4.13809	8.54

MOUNT JORDAN, CUSTER COUNTY, IDAHO.

On a high, sharp, white peak on the main divide between the waters of Salmon and the Middle Fork of Salmon rivers, at the heads of Jordan, Mayfield, and Lightning creeks, about 5 miles northwest of Sunbeam mill on Jordan Creek, 3 miles west of the road crossing the main divide between Jordan and Mayfield creeks. Good route up Jordan Creek.

Station mark: A chiseled cross on placed rock centered under a quadripod tree signal and a small monument.

Reference mark: A chiseled cross on placed rock buried 6.5 feet east.

[Latitude 44° 28′ 16.2″. Longitude 114° 46′ 46.2″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McGowan	19 19 00.04	199 16 19.84	4.18572	9.530
The General			4.36135	2.16
Eustes	297 10 18.47	117 13 11.36	3.78775	3.81
Bonanza			4.16075	9.00
Robinson Bar			4.42793	16.65

PROSPECT, CUSTER COUNTY, IDAHO. (Not occupied.)

Rock on the highest point of a partly timbered hill on ridge east side of Prospect Creek, 3 miles south of Salmon River, 1.25 miles northwest of Robinson Bar triangulation station and monument.

Station mark: Rock on highest point.

[Latitude 44° 13′ 12.56″. Longitude 114° 45′ 17.92″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McGowan	152 22 26	332 18 45	4.18041	9.41
Bonanza	198 36 42	18 39 24	4.20698	10.01
Robinson Bar			3.29579	1.23

RED FISH LAKE, CUSTER COUNTY, IDAHO. (Not occupied.)

Small monument or rock on east knob of big mountain in the Sawtooth Range, about 5 miles southwest of Red Fish Lake on tributaries of Salmon River.

Station mark: Small monument or rock on East Knob.

[Latitude 44° 02′ 36.6″. Longitude 114° 57′ 59.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Prominent	183 55 38	03 57 45	4.76835	36.45
McGowan	196 35 29	16 40 39	4.53772	21.44
Trap	205 23 59	25 37 37	4.78000	37.44

ROAD CANYON, CUSTER COUNTY, IDAHO. (Not occupied.)

On a white, low grassy hill on the main divide between Salmon and Lost rivers, at the head of Anderson Fork of Road Canyon Creek, about 6 miles a little north of west from Dickey post office.

[Latitude 44° 08′ 55.60″. Longitude 114° 00′ 49.26″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ′	*Log. meters.*	*Miles.*
Jerry	37 20 49.6	217 16 55	4.09181	7.68
Spar			4.14855	8.75
Anderson	172 02 37.6	352 02 06.7	3.74418	3.45

SPEED, CUSTER COUNTY, IDAHO.

On the east hill between the Clayton-Mackay road and the trail that branches from this road and leads from Joe Clark's ranch to Bradshaw's ranch on Speed Creek. Hill is 1 mile northwest of Joe Clark's house and 1.5 miles southeast of the forks of the Clayton-Mackay and the Clayton-Challis wagon roads.

Station mark: A chiseled cross on rock under a rock monument.

[Latitude 44° 14′ 33.83″. Longitude 114° 19′ 09.55″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ram	172 07 37	352 06 36	4.14661	8.71
Bridge			3.71239	3.20
Gossi	301 37 52	121 40 44	3.80825	4.00

STEEL BRIDGE, CUSTER COUNTY, IDAHO. (Not occupied.)

The steel bridge on the Challis-McKay stage road across Salmon River, 3 miles southeast of Challis City.

Station mark: Northwest end of bridge.

[Latitude 44° 28′ 17.29″. Longitude 114° 11′ 55.24″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Klug			3.77748	3.72
Challis	134 48 52	314 46 10	3.85694	4.47
Grouse	218 22 01	38 26 25	4.12640	8.31

SUNBEAM (GREYLOCK MOUNTAIN), CUSTER COUNTY, IDAHO. (Not occupied.)

On Greylock Mountain a big, white, dome-shaped mountain on the divide between Jordan and Eight Mile creeks, 1 mile east of Sunbeam Mill on Jordan Creek, 6 miles north and a little east of Bonanza post office. Easily reached from Jordan Creek side.

Station mark: A small monument.

[Latitude 44° 25′ 13.08″. Longitude 114° 41′ 48.38″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Robinson Bar	08 20 09	188 18 27	4.38182	14.97
McGowan	52 56 28	232 50 47	4.16495	9.08
Bonanza			3.84486	4.35

TANGO, CUSTER COUNTY, IDAHO. (Not occupied.)

On a rock peak on divide between tributaries of the West Fork of the Yankee Fork and the Middle Fork of Salmon rivers, 10 miles northwest of Bonanza post office, 4 miles north of Hyndman Lake. Most easily reached from the Bonanza-Cape Horn ranger station trail.

Station mark: Highest point of peak.

[Latitude 44° 27′ 02.33″. Longitude 114° 54′ 05.62″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bonanza	301 32 34.0	121 41 26	4.29551	12.27
Robinson Bar			4.57834	23.53
McGowan	339 04 37.0	159 07 04	4.11560	8.11

U. S. M. M. NO. 3, CUSTER COUNTY, IDAHO. (From one triangle only, unchecked.)

On a low hill, about 800 feet south of the junction of Warm Springs Creek and Salmon River, on the north side of the stage road, less than 0.25 mile north of the Robinson Bar Hotel, and 18 miles west of Clayton post office.

Station mark: A chiseled cross on placed rock centered under a small monument.

Reference mark: Nail in top of the 848 post in big rock pile marked U.S.M.M. No. 3, 9.50 feet west.

[Latitude 44° 15′ 03.68″. Longitude 114° 40′ 25.78″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Robinson Bar	46 40 55.6	226 38 08.2	3.86458	4.55
C. M. Small	254 18 52.6	74 23 51.7	3.99443	6.13

MONTANA.

TRIANGULATION STATIONS.

Fattig and Huntley quadrangles.

MUSSELSHELL AND YELLOWSTONE COUNTIES.

During the season of 1916 George T. Hawkins extended triangulation northward from the line Absaroka–Billings so as to control the Fattig 30-minute quadrangle.

Eight new stations were occupied and one point was located by intersection.

Distances depend on the value of the line Absaroka–Billings, as given on pages 310–311, Bulletin 122.

Azimuths depend on Polaris observations made at station Rattlesnake, August 16, 1916. The position of Billings given on Bozeman datum in Bulletin 122 was corrected to approximate North American datum by subtracting 5.3″ from its latitude and 0.0″ from its longitude. Absaroka was then recomputed with the observed azimuth, and points to the north were computed from these corrected positions.

ABSAROKA, YELLOWSTONE COUNTY, MONT.

In sec. 28, T. 1 S., R. 29 E., on grassy knoll which breaks off abruptly on the south and east sides and is nearly level to the northwest. Knoll is 6 miles south of Haley's ranch and about 1 mile north of old railroad grade.

Signal: Small pine tree set in ground.

Station mark: Stone 10 by 12 by 24 inches, set 22 inches in the ground, in the approximate position of the original station. Cross cut on top.

[Latitude 45° 42′ 34.52″. Longitude 108° 08′ 56.74″.]

(H)=by G. T. Hawkins in 1916. (B)=Bozeman base.

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Billings (H)	91	32	19.16	271	19	00.66	4.3826370	14.996
Rattlesnake (H)	134	30	54.24	314	18	26.81	4.4984376	19.579
Arrow (H)	171	20	31.25	351	19	06.48	4.2291342	10.531
Mesa (B)	241	06	23	61	19	21	4.4279156	.....
Far West (B)	291	01	30	111	17	09	4.4838382	.....
Billings (B)	91	33	05	271	19	46	4.3826370	.....
Mauvais Terre (B)	40	10	49	219	59	09	4.3362426	.....
Boundary (B)	58	55	29	238	36	17	4.6111079	.....
Canyon (B)	105	29	06	285	01	21	4.7164202	.....

ARROW, YELLOWSTONE COUNTY, MONT.

About 6 miles south of Warden (a station of the Northern Pacific Railway), near the corner of Tps. 1 and 2 N., Rs. 28 and 29 E., on north end of a butte which projects north from table-land, and about 0.75 mile west of Arrow Creek.

Signal: Small cedar tree set in ground and braced.

Station mark: Stone 5 by 6 by 18 inches, set flush with surface; tablet in top.

Reference mark: Pile of stones 6 feet southeast.

[Latitude 45° 51′ 37.21″. Longitude 108° 10′ 55.01″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Rattlesnake	104	58	24.71	284	47	21.24	4.3142685	12.812
Justice	137	14	05.64	316	58	31.61	4.6133731	25.511
Shepherd	154	42	09.37	334	37	19.72	4.3072185	12.606
Absaroka	351	19	06.48	171	20	31.25	4.2291342	10.531

BILLINGS, YELLOWSTONE COUNTY, MONT.

On bald butte, 5 miles south and 2 miles east of Billings. Has scattering trees on south end, which is 100 feet lower than the top. About 100 feet north of east and west section line.

Signal: Small pine tree set 2 feet in ground.

Station mark: Stone 5 by 6 by 20 inches, set 20 inches in ground in approximate position of original station. Cross and U. S. on top.

[Latitude 45° 42′ 54.0″. Longitude 108° 27′ 32.2″.]

(H)=By G. T. Hawkins in 1916. (B)=Bozeman Base.

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Justice (H)	172	02	04.50	351	58	28.01	4.6691784	29.009
Rattlesnake (H)	184	11	53.54	4	12	45.92	4.3325775	13.364
Shepherd (H)	200	19	26.15	20	26	32.60	4.5657634	22.862
Absaroka (H)	271	19	00.66	91	32	19.16	4.3826370	14.996
Absaroka (B)	271	19	46	91	33	05	4.3826370	.....
Mauvais Terre (B)	329	17	20	149	22	57	4.3011815	.....
Canyon (B)	116	44	22	296	29	56	4.4655250	.....
Boundary (B)	26	19	05	206	13	10	4.3855090	.....

BULL, MUSSELSHELL COUNTY, MONT.

In northeast corner of sec. 33, T. 6 N., R. 27 E., on highest part and near southeast part of Bull Mountain, which is a high butte nearly level on top and breaks off sharply on the south side. There is a fringe of trees near the south edge; those near the signal were cut and one tree (pine) about 12 inches in diameter trimmed with tuft in top for signal.

Signal: Pine tree.

Station mark: Tablet in big rock flush with surface, 50 feet north of bluff and 13 feet S. 81° W. of lone pine.

[Latitude 46° 13′ 35.28″. Longitude 108° 20′ 51.41″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Rattlesnake	11	17	08.34	191	13	12.31	4.5574806	22.430
Justice	54	52	35.76	234	44	09.16	4.2655048	11.451
Rater	161	51	37.51	341	49	51.83	4.0022363	6.246
Fattig	226	34	26.78	46	39	30.33	4.0927025	7.692
Shepherd	349	27	55.62	169	30	14.99	4.3568994	14.133

CHIMNEY, MUSSELSHELL COUNTY, MONT. (Not occupied.)

Sighted from only two points.

In sec. 20, T. 8 N., R. 28 E., is a column of rock about 40 feet high and about 12 feet across on top, which stands on top of a low hill, about 0.5 mile east of Fattig Creek and about 5 miles nearly north from Fattig post office.

Signal and station mark: Center of rock column.

[Latitude 46° 25′ 11.79″. Longitude 108° 13′ 39.24″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fattig	1 08 11	181 08 02	4.11401	8.079
Gibby	136 07 42	316 01 18	4.21143	10.111

FATTIG, MUSSELSHELL COUNTY, MONT.

A high bald butte about 4 miles south and 1 mile east of Fattig post office, in sec. 4, T. 6 N., R. 28 E., and about 1.5 miles southeast from Miss E. M. George's house.

Signal: Small pine trimmed, which is 25 feet west from highest part of butte.

Station mark: Sandstone block 8 by 12 by 24 inches set 20 inches in the ground.

[Latitude 46° 18′ 10.78″. Longitude 108° 13′ 51.29″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bull	46 39 30.33	226 34 26.78	4.0927025	7.692
Rater	94 59 56.90	274 53 07.38	4.0851085	7.559
Gibby	155 58 50	335 52 35	4.43255	16.823
Chimney	181 08 02	1 08 11	4.11401	8.079

GIBBY, MUSSELSHELL COUNTY, MONT.

About 3 miles north and 1 mile east of Gage (a station on the Chicago, Milwaukee & St. Paul Railway), on a bald butte, which is the highest ground in the neighborhood and a very prominent landmark. It is near the northeast corner of sec. 25, T. 9 N., R. 26 E.

Signal: Small pine tree braced with stones.

Station mark: Tablet in solid rock.

Reference marks: (1) 10 feet from south face of butte; (2) 10 feet from west face of butte; (3) 60 feet from rock on north face of butte.

[Latitude 46° 31′ 31.34″. Longitude 108° 22′ 28.33″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rater	2 33 13	182 32 37	4.37465	14.723
Chimney	316 01 18	136 07 42	4.21143	10.111
Fattig	335 52 35	155 58 50	4.43255	16.823

JUSTICE, YELLOWSTONE COUNTY, MONT.

On a wooded butte in sec. 6, T. 4 N., R. 26 E., known locally as Justice Butte. The butte has about 1 acre on top and is nearly flat. The timber was partly cleared from top and one pine tree near western edge was trimmed and used for a signal.

Signal: Pine tree 12 inches in diameter. Tuft in top.

Station mark: Tablet cemented in solid rock 6 inches below surface and pile of stone over it.

Reference mark: Signal tree 9 feet northeast.

[Latitude 46° 07′ 51.38″. Longitude 108° 32′ 33.56″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rater	210 30 37.95	30 37 19.32	4.3697415	14.558
Bull	234 44 09.16	54 52 35.76	4.2655048	11.451
Shepherd	301 18 10.50	121 28 55.51	4.3529962	14.007
Arrow	316 58 31.61	137 14 05.64	4.6133731	25.511
Rattlesnake	341 57 34.54	162 02 03.95	4.4159425	16.192
Billings	351 58 28.01	172 02 04.50	4.6691784	29.009

RATER, MUSSELSHELL COUNTY, MONT.

Near corner of secs. 20, 21, 28, and 29, T. 7 N., R. 26 E., on a bald butte about 3 miles northeast of Mr. Rater's ranch, on Halfbreed Creek, and on highest part of butte. Good view in all directions.

Signal: Tuft in top of pine tree just over west slope of butte and 68 feet nearly west from mark.

Station mark: Tablet set in stone 10 by 12 by 24 inches set 20 inches in ground.

[Latitude 46° 18′ 44.72″. Longitude 108° 23′ 17.66″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log, meters.*	*Miles.*
Justice	30	37	19.32	210	30	37.95	4.3697415	14.558
Gibby	182	32	37	2	33	13	4.37465	14.723
Fattig	274	53	07.38	94	59	56.90	4.0851085	7.559
Bull	341	49	51.83	161	51	37.51	4.0022363	6.246

RATTLESNAKE, YELLOWSTONE COUNTY, MONT.

On a well-known and prominent bald butte about 11 miles north and 3 miles east of Billings. About 15 feet wide east and west and 30 feet long north and south on top.

Signal: Sawed lumber tripod.

Station mark: Tablet in solid rock.

[Latitude 45° 54′ 28.72″. Longitude 108° 26′ 19.16″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log, meters.*	*Miles.*
Billings	4	12	45.92	184	11	53.54	4.3325775	13.364
Justice	162	02	03.95	341	57	34.54	4.4159425	16.192
Bull	191	13	12.31	11	17	08.34	4.5574806	22.430
Shepherd	220	39	25.23	40	45	39.86	4.2355932	10.689
Arrow	284	47	21.24	104	58	24.71	4.3142685	12.812
Absaroka	314	18	26.81	134	30	54.24	4.4984376	19.579

SHEPHERD, YELLOWSTONE COUNTY, MONT.

About 7 miles northeast of the town of Shepherd, on wooded hill in sec. 18, T. 3 N., R. 28 E., 0.25 mile west of Custer-Billings road and on west end of ridge. Timber cleared from west end of hill and one tree (pine 10 inches in diameter) trimmed and left for signal.

Signal: Lone pine tree 6.7 feet S. 27° 48′ W. of station mark.

Station mark: Stone 6 by 10 by 24 inches set 22 inches in ground. Tablet in top.

Reference mark: Lone pine tree 6.7 feet S. 27° 48′ W.

[Latitude 46° 01′ 31.07″. Longitude 108° 17′ 38.06″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log, meters.*	*Miles.*
Billings	20	26	32.60	200	19	26.15	4.5657634	22.862
Rattlesnake	40	45	39.86	220	39	25.23	4.2355932	10.689
Justice	121	28	55.51	301	18	10.50	4.3529962	14.007
Bull	169	30	14.99	349	27	55.62	4.3568994	14.133
Fattig	188	56	05.01	8	58	48.59	4.4948230	19.417
Arrow	334	37	19.72	154	42	09.37	4.3072185	12.606

ILLINOIS.

PRIMARY TRAVERSE.

Beardstown, Belvidere, Carbondale, Chandleville, Dixon, Dongola, Genoa, Harvard, Havana, Jonesboro, Kings, Kirkland, Mound City, Oregon, Rockford, Thebes, and Vermont quadrangles.

ALEXANDER, BOONE, OGLE, PULASKI, SCHUYLER, UNION, AND WINNEBAGO COUNTIES.

The primary traverse was done by J. H. Wilson in 1916 and F. W. Crisp in 1917, as indicated at the beginning of each quadrangle list.

For other positions in Illinois see United States Geological Survey Bulletins 201, 216, 245, 276, 310, 440, 496, 551, and 644, Appendix to the Eighteenth and Nineteenth Annual Reports of the Director, United States Coast and Geodetic Survey, Special Publication 30, Appendix EEE, Report of the Chief of Engineers for 1902, Mississippi River Commission Report for 1883, 1888, 1892, 1893, and 1894, and Appendix 22, House Document 50, Sixty-first Congress.

BEARDSTOWN QUADRANGLE.

Along highways near north border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks	40 14 44.8	90 24 45.1	.....
T road west, 30 feet southwest of Ezra Tannehill's mail box	40 14 41.5	90 22 14.8	.....
T. 3 N., R. 1 E., 15 feet south and 35 feet east of corner of secs. 11, 12, 13, and 14, at southeast corner of crossroads, 1.25 miles north of Astoria; iron post stamped "Prim. Trav. Sta. No. 10, 1916, Ill".	40 14 48.6	90 21 18.8	4,402
T. 3 N., Rs. 1 and 2 E., corner of secs. 7, 12, 13, and 18, opposite north and south fence line, center of road	40 14 46.9	90 20 10.3	5,319
T. 3 N., R. 2 E., corner of secs. 7, 8, 17, and 18, T road east of Leesburg	40 14 46.3	90 19 03.0	.....
T. 3 N., R. 2 E., corner of secs. 8, 9, 16, and 17, bend in road	40 14 47.0	90 17 48.8	5,754
T road east, center of triangle	40 14 33.4	90 16 57.7	4,196
Crossroads, in line with road south, 170 feet north of small iron bridge	40 14 27.8	90 15 44.3	5,718

Magnetic declination for north border of quadrangle, 5° 44′ E.

BELVIDERE QUADRANGLE.

Along highways near south border of quadrangle. (By F. W. Crisp in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Private road north	42 15 15.1	88 45 09.7	.....
T road south, on north and south section line	42 15 10.4	88 45 50.1	3,080
Epworth Camp, T road north	42 15 08.3	88 46 07.4	1,320
Iron railroad bridge over creek, center of	42 15 16.3	88 46 14.5	961
Do	42 15 16.1	88 47 39.2	6,370
Belvidere, 1.5 miles east of, railroad crossing	42 15 04.9	88 48 54.7	5,798
T. 44 N., Rs. 3 and 4 E., on line between secs. 31 and 36, T road south	42 15 09.4	88 49 18.5	1,840
Belvidere, Logan Avenue and State Street intersection	42 15 19.1	88 50 19.5	4,694
Belvidere, State Street crossing on Chicago & Northwestern Ry.	42 15 24.2	88 50 24.5	640
Belvidere, Locust and State street intersection	42 15 26.8	88 50 27.0	320

BELVIDERE QUADRANGLE—Continued.

Along highways near south border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Belvidere, Locust and West Pleasant streets, 50 feet south by 30 feet west of intersection; iron post stamped "Prim. Trav. Sta. No. 13, 1917"	42 15 16.3	88 50 44.9	1,715
Crossroads	42 15 13.0	88 51 39.3	4,106
T road north	42 15 18.1	88 51 51.6	1,065
North and south fence, corner of secs. 27, 28, 33, and 34	42 15 17.5	88 52 49.6	4,360
Private road north and south	42 15 17.1	88 53 25.0	2,660
North and south fence	42 15 17.0	88 53 42.7	1,330
T road south	42 15 15.3	88 54 02.1	1,473
Second-class road north fording creek	42 15 05.5	88 54 34.3	2,615
T. 44 N., R. 3 E., on line between secs. 31 and 32, T road south	42 15 07.9	88 55 11.3	2,800
T road west	42 15 20.9	88 55 45.1	2,859
County and range line, Rs. 2 and 3 E., north and south fence	42 15 15.5	88 56 26.1	3,133
T. 44 N., R. 2 E., line between secs. 25 and 26, crossroads	42 15 14.5	88 57 18.7	3,959
T. 44 N., R. 2 E., quarter corner between secs. 26 and 35, crossroads	42 15 13.6	88 58 11.9	4,000
T. 44 N., R. 2 E., corner of secs. 26, 27, 34, and 35	42 15 13.0	88 58 47.2	2,660
T. 44 N., R. 2 E., corner of secs. 27, 28, 33, and 34, crossroads	42 15 12.0	88 59 57.8	5,305

Magnetic declination along south border of quadrangle, 2.5° E.

Along east border of quadrangle. (By F. W. Crisp in 1917.)

T. 44 N., R. 4 E., corner of secs. 3, 4, 9, and 10, crossroads	42 18 47.8	88 45 50.6	.....
Tps. 44 and 45 N., R. 4 E., corner of secs. 3, 4, 33, and 34, crossroads	42 19 41.0	88 45 50.4	5,390
T. 45 N., R. 4 E., quarter corner between secs. 33 and 34, T road west	42 20 07.0	88 45 50.7	2,630
T. 45 N., R. 4 E., corner of secs. 27, 28, 34, and 35, T road east	42 20 33.5	88 45 51.0	2,690
T. 45 N., R. 4 E., corner of secs. 21, 22, 27, and 28, T road south	42 21 25.5	88 45 51.4	5,259
T. 45 N., R. 4 E., quarter corner between secs. 22 and 27	42 21 25.6	88 45 15.7	2,680
T. 45 N., R. 4 E., center of quarter corner of sec. 22, T road east	42 21 51.5	88 45 16.0	2,620
T. 45 N., R. 4 E., quarter corner between secs. 15 and 22, T road east	42 22 17.5	88 45 15.7	2,640
T. 45 N., R. 4 E., in sec. 15, 20 feet north by 15 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 14, 1917"	42 22 24.9	88 45 15.7	746

West along highways through center of quadrangle. (By F. W. Crisp in 1917.)

Prim. Trav. Sta. No. 4 (previously described)	42 22 24.9	88 45 16.7	.....
T. 45 N., R. 4 E., quarter corner between secs. 20 and 21	42 21 51.2	88 47 01.5	8,649
Crossing of north and south road and Chicago & Northwestern Ry.	42 22 01.2	88 47 36.3	2,797
T. 45 N., R. 4 E., quarter corner between secs. 17 and 20, crossroads	42 22 17.4	88 47 36.2	1,640
T. 45 N., R. 4 E., corner of secs. 17, 18, 19, and 20, crossroads	42 22 17.4	88 48 11.0	2,610
T. 45 N., Rs. 3 and 4 E., corner of secs. 13, 24, 18, and 19, Poplar Grove	42 22 17.9	88 49 18.9	5,100
T. 45 N., R. 3 E., corner of secs. 13, 14, 23, and 24, T road north	42 22 17.2	88 50 29.5	5,300
T. 45 N., R. 3 E., quarter corner between secs. 14 and 23, crossroads	42 22 16.9	88 51 04.6	2,640
T. 45 N., R. 3 E., corner of secs. 14, 15, 22, and 23, T road north	42 22 16.5	88 51 39.9	2,650
T. 45 N., R. 3 E., quarter corner between secs. 15 and 22	42 22 16.2	88 52 15.1	2,640
T road to north	42 22 16.0	88 52 32.8	1,330
Caledonia, 345 feet northeast of railroad station, at northwest corner of old store, on east side street, at sharp angle to east; iron post stamped "Prim. Trav. Sta. No. 15, 1917"	42 22 15.2	88 53 29.2	4,234
T road to west	42 22 41.0	88 54 28.1	5,140
T. 45 N., R. 2 E., in sec. 13, T road east	42 22 39.6	88 56 52.3	10,820
T road west, on line between secs. 13 and 24	42 22 13.5	88 56 43.9	2,720
T. 45 N., R. 2 E., corner of secs. 13, 14, 23, and 24	42 22 13.0	88 57 35.8	3,900
Dim T road north	42 22 12.9	88 57 57.5	1,630
T. 45 N., R. 2 E., quarter corner between secs. 14 and 23, T road south	42 22 12.8	88 58 11.1	1,020
T. 45 N., R. 2 E., corner of secs. 14, 15, 22, and 23, private road south	42 22 12.6	88 58 46.3	2,650
T. 45 N., R. 2 E., in sec. 22, T road north	42 22 00.9	88 59 39.6	4,170
T. 45 N., R. 2 E., line between secs. 21 and 22 (fence)	42 22 58.5	88 59.57.3	1,356

Magnetic declination in center of quadrangle, 3.2° E.

CARBONDALE QUADRANGLE.

NOTE.—An adjustment of 3″ in latitude and 0.5″ in longitude has been applied between the east and west boarders of this quadrangle.

East along highways near south border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 12 S., R. 1 W., line between secs. 2 and 3, T road east, 40 feet north of T lane west	37 30 07.8	89 11 33.9	.....
Cache River, south end of bridge over	37 30 16.5	89 10 15.1	6,406
Saratoga, sulphur-well pump at T road west	37 30 35.1	89 09 23.0	4,595
Third Principal Meridian, center of east and west road, 440 feet east of Methodist Episcopal Church	37 30 25.3	89 09 17.1	1,122
T. 12 S., R. 1 E., quarter corner in center of sec. 6, T road south mean of Henderson and North American datum	37 30 19.2	89 08 41.5	2,934

Magnetic declination near south border of quadrangle, 5° E.

CHANDLEVILLE QUADRANGLE.

Along highways near northwest corner of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 3 N., R. 2 E., in north half of sec. 13, at road forks, at south edge of road, 15 feet east of James Walraven's mail box, 35 feet southwest of walnut tree, 4,200 feet south of small iron bridge over creek; iron post stamped "Prim. Trav. Sta. No. 11, 1916, Ill."	40 14 31.2	90 14 59.8	.....

Magnetic declination for northwest corner of quadrangle, 5° 44′ E.

DIXON QUADRANGLE.

Near northeast corner of quadrangle. (By F. W. Crisp in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 23 N., R. 11 E., near quarter corner on west side of sec. 7, 30 feet south by 30 feet east of T road east; iron post stamped "Prim. Trav. Sta. No. 8, 1917. El. 690"	41 59 40.1	89 16 45.7	.....
T. 23 N., Rs. 10 and 11 E., crossing of range line on Chicago, Burlington & Quincy R. R., 460 feet east of Honey Creek (B. 551, p. 135)	41 59 28.8	89 16 46.6	1,145

Magnetic declination for northeast corner of quadrangle, 4.5° E. (one observation).

DONGOLA QUADRANGLE.

NOTE.—An adjustment of approximately 3″ in latitude and 1″ in longitude has been applied between the east and west borders of this quadrangle because of the difference in Henderson and North American datum in which respectively positions on the east and west borders of the quadrangle are based. The correction to Henderson datum is + in latitude and − in longitude.

East along highways near north border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Anna, 2 miles north by 1 mile west of, east side in turn in road, about 1,600 feet east and 800 feet south of quarter corner of sec. 7, T. 12 N., R. 1 W.; iron post stamped "Prim. Trav. Sta. No. 155, Ill. 1911" (approximate North American datum)	37 29 20.0	89 15 50.7	.....
Mail box on fence post about 500 feet northeast of road forks	37 29 19.5	89 13 43.1	10,278
Barring schoolhouse, northeast corner of	37 29 47.1	89 12 19.7	7,271

DONGOLA QUADRANGLE—Continued.

East along highways near north border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 12 S., R. 1 E., 75 feet north of center of crossroads, near center of sec. 8, at southwest corner of old store building; iron post stamped "Prim. Trav. Sta. No. 1, 1916, Ill"	37 29 28.7	89 07 25.4	.....
Bradshaw Creek, east end of bridge over	37 29 31.8	89 06 40.7	3,611
W. C. Bishop's mail box at bend in road	37 29 23.7	89 05 45.3	4,541
Road south at Newton schoolhouse, 610 feet south of road forks is corner of secs. 10, 11, 14, and 15, T. 12 S., R. 1 E. (Henderson datum)	37 29 00.1	89 04 48.6	5,166
T. 12 S., R. 1 E., center of road at line between secs. 11 and 12	37 29 06.9	89 03 43.1	5,320
Road forks, at road north on Johnson-Union county line	37 29 10.4	89 02 36.9	5,340
Elvira schoolhouse, 30 feet north of road forks; iron post stamped "Prim. Trav. Sta. No. 13, 1915 Ill"	37 29 36.9	89 01 49.5	4,652
Anna, railroad crossing, just southeast of depot, center of street-car track, halfway between the two main tracks of Illinois Central R. R. (North American datum)	37 27 36.7	89 14 49.9	.....

West along highways through center of quadrangle.

T road east (Henderson datum)	37 21 01.5	89 01 48.2	.....
T. 13 S., R. 2 E., quarter corner, west side of sec. 30, Union-Johnson county line	37 21 09.5	89 02 39.3	4,204
Cypress Creek, center of bridge over	37 21 42.4	89 04 06.3	7,775
T. 13 S., R. 1 E., line between secs. 15 and 22, center of road in line with fence east, 0.5 mile south of Friendship Church	37 22 37.7	89 05 40.4	9,442
T. 13 S., R. 1 E., quarter corner between secs. 16 and 21, at bend in road, 460 feet south of T road east	37 22 41.1	89 06 29.4	3,965
T. 13 S., R. 1 E., approximate corner of secs. 16, 17, 20, and 21, T road south at Karraker schoolhouse	37 22 40.9	89 07 02.4	2,660
Karraker schoolhouse, 0.75 mile west of, on embankment at northeast corner of T road north; iron post stamped "Prim. Trav. Sta. No. 2, 1916 Ill"	37 22 36.6	89 07 50.8	3,930
Big Creek, center of bridge over	37 22 30.5	89 08 15.6	2,080
Third Principal Meridian (approximate) center of road	37 22 08.3	89 09 24.0	5,952
Dongola, Baggott's grocery and furniture store, southwest corner of (approximate North American datum)	37 21 44.4	89 09 56.2	3,540
Road forks at roads, north, northwest, and southeast, telephone line follows road north	37 22 25.4	89 11 03.8	6,860
	37 22 51.8	89 11 53.9	4,849
T road west	37 22 56.2	89 12 44.0	4,064
T. 13 S., R. 1 W., line between secs. 15 and 16, not in road	37 22 59.2	89 13 05.0	1,726
Oak tree at road forks at road south	37 23 14.0	89 13 59.4	4,639
Road west, at Chapel Church	37 23 14.8	89 14 58.6	4,770
St. John's Church, 0.3 mile west of, T road east	37 22 41.8	89 14 59.6	3,325
T road west			

East along Chicago & Eastern Illinois R. R. and highways near south border of quadrangle

T. 14 S., R. 1 W., railroad crossing at east and west road probably running through center of sec. 32	37 15 15.8	89 14 24.8	.....
Railroad crossing, north and south road, west end of railroad section 154	37 15 51.8	89 13 16.1	6,619
Railroad crossing, 300 feet southwest of milepost 20 (mean of Henderson and North American datums)	37 16 26.8	89 11 55.6	7,390
Ullin, railroad crossing, Illinois Central R. R., east track, about 300 feet south of depot	37 16 34.4	89 11 06.2	4,062
T. 14 S., R. 1 W., line between secs. 25 and 26, T road west	37 16 14.0	89 10 29.8	3,594
Third Principal Meridian, west corner of secs. 19 and 30, T. 14 S., R. 1 E., lane north, roads east and south	37 16 18.1	89 09 25.1	5,242
T road west	37 16 16.2	89 07 54.4	7,320
Good Hope Church, 15 feet south of line between secs. 29 and 32, T. 14 S., R. 1 E., at southeast corner of T road east; iron post stamped "Prim. Trav. Sta. No. 7, 1916 Ill"	37 15 23.4	89 07 54.4	5,361
Crossroads	37 15 22.0	89 06 48.4	5,330
T. 14 S., R. 1 E., road west on line between secs. 28 and 33	37 15 21.2	89 06 03.5	3,620

Magnetic declination along north border of quadrangle, 5° E.; through center of quadrangle, 4° 40′ E.; along south border of quadrangle, 4° 30′ E.

GENOA QUADRANGLE.

South along highways near west border of quadrangle. (By F. W. Crisp in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T private road to west	42 02 09.0	88 44 49.4	
Center of T roads	42 01 41.9	88 44 39.2	2,840
Road fork, at sign painted "DeKalb 6-1/2 M."	42 01 31.2	88 44 35.4	1,127
T road west	42 01 12.4	88 44 34.7	1,902
T. 41 N., R. 4 E., near center of sec. 26, 30 feet south and 40 feet east of crossroads, 750 feet north of Chicago Great Western R. R. tracks; iron post stamped "Prim. Trav. Sta. No. 29, 1914, Ill"	42 00 06.7	88 44 23.6	6,701
T. 43 N., R. 4 E., on line between secs. 27 and 34, T road north	42 10 05.5	88 44 56.9	
T. 43 N., R. 4 E., quarter corner in sec. 27, T road east	42 10 31.6	88 44 56.9	2,650
T. 43 N., R. 4 E., on fence line between secs. 22 and 27	42 10 57.7	88 44 56.8	2,640
T. 43 N., R. 4 E., in sec. 22, T road east	42 11 10.9	88 44 56.7	1,330
T. 43 N., R. 4 E., in sec. 22, junction with road southwest	42 11 42.9	88 44 56.8	3,240
T. 43 N., R. 4 E., on line between secs. 15 and 22, T road east	42 11 50.0	88 44 56.8	720
T. 43 N., R. 4 E., in sec. 10, crossroads	42 13 08.4	88 44 57.5	
T. 43 N., R. 4 E., quarter corner between secs. 11 and 12, T road west	42 13 08.6	88 43 29.2	6,644
T. 43 N., R. 4 E., corner of secs. 1, 2, 11, and 12, T road east	42 13 26.6	88 43 29.4	1,820
North bridge of two iron bridges within 100 feet of each other	42 14 01.4	88 43 29.4	3,520
T road west	42 14 27.5	88 43 29.4	2,640

Magnetic declination along north half of west border of quadrangle, 3.3° E.

HARVARD QUADRANGLE.

Along highways near southwest corner of quadrangle. (By F. W. Crisp in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
Garden Prairie, T 44 N., R. 4 E., on line between secs. 35 and 36, 20 feet north by 20 feet west of crossroads, on Grant Highway, in yard of Methodist Church: iron post stamped "Prim. Trav. Sta. No. 12, 1917"	° ′ ″ 42 15 12.6	° ′ ″ 88 43 29.7	*Feet.*
T road south	42 15 14.8	88 44 40.7	5,340

Magnetic declination near southwest corner of quadrangle, 3.3° E.

North along highways near west border of quadrangle. (By F. W. Crisp in 1917.)

Garden Prairie station, 600 feet west of, road crossing	42 15 16.4	88 43 29.3	
T. 44 N., R. 4 E., quarter corner between secs. 25 and 26, T road west	42 15 45.8	88 43 29.7	2,980
T. 44 N., R. 4 E., corner of secs. 23, 24, 25, and 26, T road east	42 16 11.9	88 43 29.7	2,640
T. 44 N., R. 4 E., quarter corner between secs. 23 and 24, crossroads	42 16 37.8	88 43 29.7	2,630
T. 44 N., R. 4 E., corner of secs. 13, 14, 23, and 24, fence line	42 17 04.0	88 43 29.7	2,650
T. 44 N., R. 4 E., quarter corner between secs. 13 and 14, fence line	42 17 30.1	88 43 29.9	2,640
T. 44 N., R 4 E., corner of secs. 11, 12, 13, and 14, fence line	42 17 56.2	88 43 30.0	2,650
Private road west	42 18 22.3	88 43 30.1	2,640
T. 44 N., R. 4 E., corner of secs. 1, 2, 11, and 12, crossroads at schoolhouse	42 18 48.3	88 43 30.3	2,640
T road south	42 18 47.9	88 44 49.1	5,920
Junction with road southwest	42 22 37.6	88 44 40.6	
T. 45 N., R. 4 E., quarter corner between secs. 14 and 15, T road east	42 22 43.7	88 44 40.6	620
T. 45 N., R. 4 E., corner of secs. 10, 11, 14, and 15, T road west	42 23 09.8	88 44 40.8	2,640
T. 45 N., R. 4 E., quarter corner between secs. 10 and 11, T road east	42 23 35.8	88 44 40.9	2,640
Crossing of north-south road, 0.3 mile west of Capron	42 23 44.1	88 44 41.0	840
T road west to Capron	42 23 55.4	88 44 41.0	1,150
T. 45 N., R. 4 E., quarter corner between secs. 2 and 3, crossroads	42 24 28.1	88 44 41.2	3,310
Tps. 45 and 46 N., R. 4 E., corner of secs. 34, 35, 2, and 3, fence	42 24 53.4	88 44 41.6	2,560
T. 46 N., R. 4 E., quarter corner between secs. 34 and 35, fence line	42 25 19.5	88 44 41.8	2,650
T. 46 N., R. 4 E., section line between secs. 27 and 34, crossroads	42 25 45.6	88 44 45.7	2,655
T road west	42 26 30.0	88 44 41.9	4,508
T. 46 N., R. 4 E., corner of secs. 14, 15, 22, and 23, crossroads	42 27 30.2	88 44 41.9	6,100
T. 46 N., R. 4 E., corner of secs. 10, 11, 14, and 15, crossroads	42 28 22.3	88 44 42.5	5,270
T. 46 N., R. 4 E., north side, corner of secs. 2 and 3, on Illinois-Wisconsin State line, T road south	42 29 32.6	88 44 45.4	7,129
Illinois-Wisconsin State line, T road north	42 29 32.5	88 44 48.9	260

Magnetic declination along west border of quadrangle, 3° E.

HAVANA QUADRANGLE.

North along highways near west border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 3 N., R. 2 E., stone quarter corner between secs. 2 and 11, 10 feet north of lane west	40 15 35.8	90 14 52.9	.....
T. 5 N., R. 2 E., quarter corner between secs. 26 and 35, center of north and south road at T road west, 25 feet southeast to telegraph pole, 15 feet west to center of triangle	40 22 43.4	90 14 44.1	.....
T. 5 N., R. 2 E., quarter corner between secs. 14 and 23, center of north and south road at east and west fence line, 940 feet north of T road east at church	40 24 27.8	90 14 42.3	.....

Magnetic declination for west border of quadrangle, 5° 12′ E.

JONESBORO QUADRANGLE.

North along Mobile & Ohio and Illinois Central railroads near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Point of switch, just south of right-angle bend in wagon road, on east side of track (North American datum)	37 15 14.0	89 15 46.0	.....
Railroad crossing, second-class road	37 15 59.9	89 15 35.6	4,720
Railroad crossing	37 16 20.0	89 15 27.3	2,135
Railroad crossing, 760 feet south of milepost 129	37 16 57.1	89 15 09.0	4,035
Elco, railroad crossing, just south of depot	37 17 57.3	89 15 44.3	6,718
Elco, 1 mile northeast of, railroad crossing	37 18 53.0	89 15 21.2	5,933
Tps. 13 and 14 S., R. 1 W., line between secs. 6 and 31, Union-Alexander county line, center of track just south of railroad crossing, county line is marked by railroad signboard	37 20 07.3	89 15 08.0	7,593
Mill Creek, railroad crossing at depot	37 20 30.5	89 15 09.9	2,346
Railroad crossing, 160 feet north of milepost 124	37 21 07.6	89 15 33.0	4,186
Springville, railroad crossing at south end of curve	37 22 18.1	89 16 01.0	7,482
Mobile & Ohio R. R. trestle 523-02, 360 feet southeast of, in sharp point of triangle formed by road forks; iron post stamped "Prim. Trav. Sta. No. 3, 1916 Ill."	37 22 45.7	89 15 58.7	2,794
Railroad crossing, 775 feet south of milepost 121	37 23 30.5	89 16 08.4	4,599
Railroad crossing, 600 feet north of trestle 525-48	37 24 55.5	89 16 24.4	8,692
Railroad crossing	37 25 21.9	89 16 44.1	3,107
Milepost 118, center of track	37 26 03.9	89 16 36.6	4,285
Jonesboro, corporation line, center of track, marked by railroad signboard	37 26 27.5	89 16 21.9	2,670
Jonesboro, railroad crossing at depot, main track	37 27 13.2	89 16 05.2	4,813
North along Illinois Central R. R.			
Railroad crossing, between tracks	37 28 10.4	89 15 23.4	.....
Railroad crossing, northbound track	37 29 00.6	89 15 34.3	5,155
Anna, 2 miles north by 1 mile west of, east side in turn of road, about 1,600 feet east and 800 feet south of quarter corner of sec. 7, T. 12 N., R. 1 W.; iron post stamped "Prim. Trav. Sta. No. 155, Ill. 1911"	37 29 20.0	89 15 50.7	2,366
North along Illinois Central R. R. near Mississippi River.			
Railroad crossing (North American datum)	37 16 00.5	89 26 22.8	.....
Railroad crossing, 460 feet north of milepost 123	37 16 21.8	89 26 22.5	2,160
T. 14 S., R. 3 W., line between secs. 21 and 28, center of track	37 16 39.1	89 26 22.2	1,750
T. 14 S., R. 3 W., line through center of sec. 16, east and west railroad crossing, 440 feet south of milepost 121	37 17 57.3	89 26 21.1	7,905
T. 14 S., R. 3 W., line between secs. 9 and 16, center of track, 275 feet south of McClure signal board	37 18 23.8	89 26 20.7	2,675
T. 14 S., R. 3 W., line between secs. 9 and 10, center of track at north and south road crossing	37 18 56.4	89 26 03.3	3,589
McClure, just northeast of depot, east and west railroad crossing	37 19 05.6	89 25 44.8	1,760
Tps. 13 and 14 N., line between secs. 2 and 35, Alexander-Union county line, center of Illinois Central R. R. track, just west of signboard along Missouri Pacific R. R. track	37 20 04.8	89 24 34.0	8,268
Railroad crossing	37 20 55.6	89 24 05.1	5,644

JONESBORO QUADRANGLE—Continued.

North along Illinois Central R. R. near Mississippi River—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Railroad crossing	37 21 21.9	89 23 54.0	2,805
Reynoldsville, 1,100 meters above, east of Illinois Central R. R., near wagon road paralleling same railroad and making slight turn near the pipe, 215 meters below angle in road, in fence corner; iron pipe (Miss. R. Comm. b. m. 16 H)	37 22 34.55	89 23 21.61	7,800
T. 13 S., R. 3 W., line between secs. 13 and 24, center of track, 15 feet south of railroad crossing	37 22 41.2	89 23 20.8	670
T. 13 S., R. 3 W., line between secs. 12 and 13, railroad crossing	37 23 34.2	89 23 19.0	5,369
Vineland, railroad crossing 2,240 feet north of, Potts Spur on Missouri Pacific R. R. just east	37 24 36.0	89 23 19.1	6,245
Railroad trestle 111–8, north end of	37 25 12.4	89 23 23.3	3,699
Ware, railroad crossing	37 26 51.7	89 23 44.6	10,195
T. 12 S., R. 3 W., line between secs. 14 and 23, 10 feet below railroad crossing, in line with fence east	37 27 58.3	89 24 10.4	7,050
Milepost 107, center of track	37 29 04.0	89 25 08.7	8,129
Milepost 106, center of track	37 29 46.5	89 25 46.7	5,280
Wolf Lake, south side of Wolf Lake and Jonesboro road, in southeastern part of Wolf Lake, 230 feet south of semaphore, 140 feet west to tracks, 18 feet north to middle of wagon road; iron post stamped "Prim. Trav. Sta. No. 153, Ill. 1911"	37 30 09.4	89 26 02.7	2,646

West along highways through center of quadrangle.

T. 13 S., R. 2 W., T road north through center of sec. 13	37 22 53.4	89 16 44.6	.....
Misenheimer schoolhouse, about 300 feet northwest of, on hill, front gate of Dillon's residence	37 23 04.5	89 17 50.1	5,414
Second-class road southwest	37 23 35.7	89 18 17.7	3,867
Mail box 84–A, in front of house on south side of road, 460 feet east of road forks	37 23 22.0	89 19.58.6	8,260
T road east, at southeast corner of, 0.5 mile south of schoolhouse; iron post stamped "Prim. Trav. Sta. No. 4, 1916 Ill."	37 22 09.7	89 21 10.0	9,316
Lyrle Bridge, north end of	37 22 07.2	89 21 30.0	1,633
Reynoldsville, railroad crossing, main track of Illinois Central R. R.	37 22 01.7	89 23 37.3	10,290

Magnetic declination through center of quadrangle, 4° 35′ E.

KINGS QUADRANGLE.

West along highways near north border of quadrangle. (By F. W. Crisp in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road east, west, and north	42 14 56.7	89 06 56.8	.....
T road north, on section line	42 14 54.1	89 08 04.2	5,074
T road west	42 14 41.6	89 08 29.0	2,259
T. 44 N., R. 1 E., quarter corner between 30 and 31, crossroads	42 14 41.1	89 08 17.5	3,650
Station 78=Prim. Trav. Sta. No. 2, 1917	42 14 40.3	89 10 23.2	4,941

West along highways near north border of quadrangle.

T. 44 N., R. 1 E., quarter corner between secs. 31 and 30, principal meridian, 35 feet south and 30 feet west of T road south, center of crossroads; iron post stamped, "Prim. Trav. Sta. No. 2, 1917"	42 14 40.3	89 10 23.2	.....
T. 26 N., R. 11 E., quarter corner between secs. 14 and 23, center of crossroads, T roads north, south, and west	42 14 52.2	89 11 32.1	5,319
T. 26 N., R. 11 E., quarter corner between secs. 15 and 22, center of crossroad, T road north	42 14 51.3	89 12 41.9	5,250
T. 26 N., R. 11 E., corner of secs. 15, 16, 21, and 22, fence to south	42 14 50.9	89 13 17.0	2,640
T. 26 N., R. 11 E., quarter corner between secs. 16 and 21, T road north, center of crossroad	42 14 50.5	89 13 51.8	2,620
T. 26 N., R. 11 E., corner of secs. 16, 17, 21, and 22, T road north, center of crossroad	42 14 50.4	89 14 26.8	2,630

KINGS QUADRANGLE—Continued.

South along highways on third principal meridian through quadrangle. (By F. W. Crisp in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tps. 43 and 44 N., R. 1 E., township corner, iron stake on fence line.	42 14 14.4	89 10 22.2	.....
Tps. 43 and 44 N., R. 1 E., iron stake at fence line	42 14 14.4	89 10 22.2	2,619
T. 26 N., R. 11 E., corner of secs. 24 and 35, T road west	42 14 00.7	89 10 22.4	1,390
T. 26 N., R. 11 E., 1,196 feet south of corner of secs. 24 and 25, on third principal meridian; iron post	42 13 48.8	89 10 21.9	1,196
T. 43 N., R. 1 E., corner of secs. 6 and 7, T road east	42 13 23.3	89 10 22.0	2,581
T. 43 N., R. 1 E., corner of secs. 7 and 18, T road east	42 12 31.0	89 10 21.7	5,300
Tps. 25 and 26 N., R. 11 E., corner of secs. 36 and 1 (fence line)	42 12 16.2	89 10 21.7	1,490
T. 43 N., R. 1 E., corner of secs. 18 and 19, T road east	42 11 38.6	89 10 21.6	3,810
T. 25 N., R. 11 E., corner of secs. 1 and 12, T road west	42 11 19.0	89 10 21.4	1,980
T road north on third principal meridian	42 10 58.9	89 10 21.4	2,040
Rock River, center of island	42 10 51.1	89 10 21.3	785
T. 43 N., R. 1 E., corner of secs. 19 and 30, on third principal meridian, concrete post	42 10 44.1	89 10 21.2	707
T road north	42 09 46.7	89 10 05.7	5,923
T road south, on third principal meridian	42 09 39.2	89 10 21.2	1,453
T. 42 N., R. 1 E., on west side of sec. 6, 30 feet west of intersection of road northeast with north-south road; iron post stamped "Prim. Trav. Sta. No. 4, 1917"	42 08 42.8	89 10 21.0	5,610
T. 42 N., R. 1 E., corner of secs. 6 and 7, T road east, 890 feet south is T. 25 N., R. 11 E., corner of secs. 25 and 36, T road west	42 08 09.2	89 10 20.5	3,392
T road east	42 07 17.3	89 10 32.1	5,326
T road west	42 06 52.3	89 10 42.8	2,660
Road forks, roads north, south, and southeast	42 06 40.3	89 10 50.6	1,343
Stillmans Valley railway station, 800 feet west of, at crossing of public road and Chicago, Milwaukee & St. Paul Ry	42 06 36.4	89 10 53.2	445
Stillmans Valley, Main Street crossing	42 06 29.2	89 10 43.2	1,046
Chicago, Milwaukee & St. Paul Ry. crossing, on third principal meridian	42 06 29.2	89 10 20.2	1,740
Chicago Great Western R. R. crossing on third principal meridian.	42 06 13.5	89 10 20.0	1,589
T. 42 N., R. 1 E., corner of secs. 19 and 30, fence east	42 05 33.2	89 10 20.4	4,080
T. 25 N., R. 11 E., T road west	42 05 06.1	89 10 20.5	2,740
T. 42 N., R. 1 E., corner of secs. 30 and 31, T road east	42 04 41.1	89 10 20.6	2,535
Tps. 41 and 42 N., R. 1 E., corner of secs. 6 and 31, crossroads	42 03 48.1	89 10 20.5	5,365
T. 24 N., R. 11 E., corner of secs. 24 and 25, 420 feet south of iron bridge over creek	42 03 28.3	89 10 20.2	2,000
T. 24 N., R. 11 E., corner of secs. 25 and 36, fence line	42 02 42.9	89 10 19.2	4,600
T. 41 N., R. 1 E., on third principal meridian, corner of secs. 7 and 18, crossroads	42 02 05.4	89 10 18.4	3,790
T. 24 N., R. 11 E., corner of fractional secs. 1 and 36, on third principal meridian	42 01 50.0	89 10 18.0	1,560
T. 41 N., R. 1 E., corner of secs. 18 and 19, fence to east	42 01 13.0	89 10 17.2	3,750
T road west to Oregon	42 00 59.1	89 10 16.8	1,400
T. 41 N., R. 1 E., west quarter corner of sec. 19, T road east	42 00 46.5	89 10 16.5	1,280
T. 41 N., R. 1 E., quarter corner between secs. 19 and 20, T road west	42 00 47.0	89 09 10.7	4,973
T road east	42 00 33.9	89 09 10.2	1,320
T. 41 N., R. 1 E., 0.25 mile north of corner of secs. 20, 21, 28, and 29, T road east; iron post stamped "Prim. Trav. Sta. No. 1, 1912 Ill." (Bull. 551, p. 161)	42 00 34.8	89 08 00.6	5,253

South along highways near east border of quadrangle.

T. 41 N., R. 2 E., north corner of secs. 3 and 4, on township line, T road south	42 03 52.9	89 00 00.1	.....
Crossroads at schoolhouse, district 5	42 03 20.6	89 00 00.4	3,270
Crossing of Chicago Great Western R. R	42 02 40.7	89 00 00.7	4,040
T. 41 N., R. 2 E., corner of secs. 9, 10, 15, and 16, crossroad east	42 02 11.4	89 00 01.5	2,960
T. 41 N., R. 2 E., corner of secs. 15, 16, 21, and 22, crossroads, macadam east to west	42 01 19.2	89 00 01.8	5,280
T. 41 N., R. 2 E., 20 feet south by 25 feet west of corner of secs. 21, 22, 27, and 28, at T road corners; iron post stamped "Prim. Trav. Sta. No. 2, 1912"	42 00 26.9	89 00 01.8	5,296

East along highways through center of quadrangle.

Prim. Trav. Sta. No. 4, 1917 (previously described)	42 08 42.8	89 10 21.0	.....
T. 41 N., R. 1 E., quarter corner, north side of sec. 5, T road to south, on Winnebago-Ogle county line	42 09 01.6	89 08 35.7	8,157
T. 42 N., R. 1 E., on township line, south side of secs. 32 and 33 (fence)	42 09 01.9	89 08 04.9	2,320
T 41 N., R. 1 E., corner of secs. 4 and 5 (fence)	42 09 02.0	89 08 02.4	190

KINGS QUADRANGLE—Continued.

East along highways through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Center of concrete bridge over ditch	42 09 02.1	89 07 52.8	720
Center of concrete culvert	42 09 02.5	89 06 53.7	4,445
Winnebago-Ogle county line and township line, center of T road north	42 09 02.8	89 06 02.2	3,878
T. 41 N., R. 1 E., north corner of secs. 2 and 3, center of T road south	42 09 03.0	89 05 46.7	1,170
Crossing of Chicago, Milwaukee & St. Paul Ry., center of track	42 09 03.1	89 05 29.6	1,290
T. 41 N., R. 1 E., center of crossroads, corner of secs. 1 and 2	42 09 03.5	89 04 36.3	4,020
Center of T road south	42 09 03.9	89 03 41.0	4,160
Center of T road east, on Winnebago-Ogle county line and township line	42 09 04.1	89 03 11.7	2,214
T. 42 N., R. 2 E., south corner between secs. 31 and 32	42 09 04.9	89 02 13.4	4,390
Winnebago-Ogle county and township line, T road north	42 09 05.1	89 01 56.0	1,310
One-sixteenth corner, fence line north and south	42 09 05.6	89 01 21.0	2,640
Tps. 41 and 42 N., R. 2 E., Winnebago-Ogle county and township line, corner of secs. 4, 5, 32, and 33, T road south	42 09 05.8	89 01 03.2	1,340

Magnetic declination along third principal meridian, 4.1° E.

KIRKLAND QUADRANGLE.

South along highways near west border of quadrangle. (By F. W. Crisp in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 44 N., R. 2 E., corner of secs. 27, 28, 33, and 34, crossroads (in Belvidere quadrangle)	42 15 12.0	88 59 57.8	.....
T. 44 N., R. 2 E., line between secs. 33 and 34, crossroads, 40 feet north of interurban electric railway	42 14 41.2	88 59 57.7	3,120
T. 44 N., R. 2 E., south side of secs. 33 and 34, on township line, T road north	42 14 19.6	88 59 57.7	2,180
T. 43 N., R. 2 E., north side of secs. 3 and 4, on township line, T road south	42 14 19.6	88 59 55.3	180
Chicago & Northwestern Ry. crossing of section line	42 13 43.0	88 59 54.7	3,710
T. 43 N., R. 2 E., corner of secs. 3, 4, 9, and 10, T road west	42 13 28.3	88 59 54.6	1,480
T. 43 N., R. 2 E., quarter corner between secs. 9 and 10, crossroads	42 13 02.3	88 59 54.4	2,630
Center of T road west	42 12 23.1	88 59 54.2	3,970
T road south, 150 feet north of bridge over Kishwaukee River	42 11 43.9	88 59 56.6	3,972
Kishwaukee River, on west side of abutment of north end of iron bridge over; bronze tablet stamped "Prim. Trav. Sta. No. 10, 1917. El. 711"	42 11 42.4	88 59 55.8	155
T. 43 N., R. 2 E., corner of secs. 21, 22, 27, and 28, T road east	42 10 51.5	88 59 54.1	5,160
T. 43 N., R. 2 E., quarter corner between secs. 27 and 28, center of T road west	42 10 25.4	88 59 54.0	2,650
T. 43 N., R. 2 E., corner of secs 27, 28, 33, and 34, center of cross-roads	42 09 59.0	88 59 53.7	2,660
Crossing of Chicago, Milwaukee & Gary Ry., center of track	42 09 33.9	88 59 53.4	2,540
Winnebago-Ogle county line and township line between Tps. 42 and 43 N., R. 2 E., T road north, south, and west	42 09 06.6	88 59 52.7	2,760
Winnebago-Ogle county line, 700 feet south of, east side of concrete culvert 700 feet south of county line; bronze tablet stamped "Prim. Trav. Sta. No. 9, 1917. El. 822"	42 08 59.1	88 59 53.1	756
T. 42 N., R. 2 E., corner of secs. 3, 4, 9, and 10, crossroads	42 08 14.9	88 59 52.3	4,475
T. 42 N., R. 2 E., corner of secs. 9, 10, 15, and 16, fence line	42 07 22.4	88 59 51.2	5,311
Center of crossroads	42 07 06.6	88 59 50.9	1,600
T. 42 N., R. 2 E., corner of secs. 15, 16, 21, and 22, T road west	42 06 30.1	88 59 50.6	3,690
T. 42 N., R. 2 E., quarter corner between secs. 21 and 22, T road west, "Monroe Center" crossroads	42 06 03.8	88 59 50.5	2,660
Chicago, Milwaukee & St. Paul Ry., crossing of, center of track	42 05 50.8	88 59 50.4	1,320
T. 42 N., R. 2 E., quarter corner between secs. 27 and 28, crossroads	42 05 11.5	88 59 50.3	3,980
T. 42 N., R 2 E., corner of secs. 27, 28, 33, and 34, T road west	42 04 45.4	88 59 50.1	2,640
T. 42 N., R. 2 E., quarter corner between secs. 33 and 34	42 04 18.1	88 59 50.0	2,760
T. 42 N., R. 2 E., south corner of secs. 33 and 34, on township line, T road north	42 03 53.0	88 59 50.0	2,540

KIRKLAND QUADRANGLE—Continued.

East along highways through center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Junction with line north and south, Winnebago-Ogle county line and township line between Tps. 42 and 43 N., R. 2 E., corner of secs. 3, 4, 33, and 34, T road north, south, and west	42 09 06.6	88 59 52.7	5,309

Magnetic declination along east and west borders of quadrangle, 3.7° E.; through center of quadrangle, 3.7° E.

Winnebago-Ogle county line, Tps. 42 and 43 N., R. 2 E., corner of secs. 3, 4, 33, and 34, T road west	42 09 06.6	88 59 52.7	.....
Winnebago-Ogle county line and township line, Tps. 42 and 43 N., R. 2 E., corner of secs. 2, 3, 34, and 35, T road east	42 09 07.6	88 58 43.0	5,256
T road south	42 09 08.0	88 57 50.7	3,940
T. 43 N., R. 2 E., corner of secs. 35 and 36, T road north	42 09 08.2	88 57 33.3	1,310
Tps. 42 and 43 N., Rs. 2 and 3 E., T road west	42 09 09.0	88 56 21.7	5,390
T. 43 N., R. 3 E., quarter corner of sec. 31, Winnebago-Boone county line	42 09 35.2	88 56 22.0	2,650
T. 43 N., R. 3 E., quarter corner of secs. 30 and 31, crossroads	42 09 35.6	88 55 11.1	5,340
T. 43 N., R. 3 E., quarter corner between secs. 29 and 30, crossroads	42 09 36.6	88 54 00.9	5,291
Crossroads	42 09 37.4	88 52 36.6	6,350
T road south	42 09 33.4	88 52 32.9	488
Boone-Dekalb county line and township line	42 09 11.4	88 52 10.9	2,771
T road west	42 08 48.4	88 51 47.5	2,927
T road south	42 08 26.9	88 51 03.0	3,992
Charter Oak School, district 24, on north-south section line, crossroads	42 08 17.3	88 50 30.1	2,660
Crossroads, on north-south section line	42 08 01.5	88 49 19.5	5,558
Quarter-section line north-south fence	42 07 57.7	88 48 45.5	2,590
North-south section-line fence	42 07 54.3	88 48 10.5	2,660
T road north at church	42 07 54.3	88 47 52.8	1,340
Crossroads near quarter corner between secs. 8 and 9	42 07 53.4	88 46 59.9	3,983
Kingston School, district 12, crossroads	42 07 45.1	88 46 07.8	4,015

South along highways near east border of quadrangle.

Crossroads	42 07 37.2	88 45 32.7	2,760
West quarter corner of sec. 15, T road west	42 07 02.2	88 45 32.5	3,540
East-west section line (fence)	42 06 36.2	88 45 32.2	2,630
Kingston, 0.25 mile north of, center of iron bridge over creek, 780 feet north of Chicago, Milwaukee & St. Paul Ry. tracks	42 06 10.6	88 45 31.9	2,590
Kingston, Main Street, intersection of	42 06 00.2	88 45 31.8	1,050
T road west, on quarter-section line	42 05 17.8	88 45 31.1	4,290
T road east	42 05 04.7	88 45 30.9	1,330
T. 42 N., R. 4 E., secs. 27 and 34, east-west section-line fence	42 04 51.7	88 45 30.7	1,320
Tps. 41 and 42 N., R. 4 E., line between, T road east	42 03 59.3	88 45 29.9	5,300
T. 41 N., R. 4 E., quarter corner between secs. 2 and 3	42 03 36.9	88 45 15.8	2,504
East-west lines between secs. 2 and 11	42 03 10.4	88 45 12.0	2,706
Crossroads	42 02 44.1	88 45 02.4	2,755

Magnetic declination for center of quadrangle, 3.6° E.; for east border of quadrangle, 3.5° E.

North along highways near east border of quadrangle. (By F. W. Crisp in 1917.)

Kingston School, district No. 12, crossroads at	42 07 45.1	88 46 07.8	.....
T. 42 N., R. 4 E., in sec. 9, 40 feet north by 40 feet east of crossroads, in yard of Kingston schoolhouse, district 12; iron post stamped "Prim. Trav. Sta. No. 11, 1917"	42 07 45.4	88 46 07 3	44
Railroad crossing, north and south road	42 08 01.9	88 46 07.9	1,674
T. 42 N., R. 4 E., on line between secs. 4 and 9	42 08 20.6	88 46 08.0	1,890
Railroad crossing, north and south road	42 08 46.1	88 46 07.9	2,580
T road east	42 08 46.6	88 46 07.9	55
Township line, Tps. 42 and 43 N., R. 4 E	42 09 13.2	88 46 07.7	2,685
Crossroads	42 09 26.6	88 46 07.5	1,360
T. 43 N., R. 4 E., quarter line in sec. 33, crossroads	42 09 39.5	88 46 08.2	1,301
T. 43 N., R. 4 E., on line between secs. 28 and 33, crossroads	42 10 05.3	88 46 31.3	3,140
T. 43 N., R. 4 E., corner of secs. 27, 28, 33, and 34, T road north	42 10 05.4	88 45 49.4	3,150
T. 43 N., R. 4 E., in sec. 15, T road west	42 12 03.1	88 45 06.0	.....

Magnetic declination along north half of east border of quadrangle, 3.3° E.

MOUND CITY QUADRANGLE.

NOTE.—An adjustment of approximately 3.5″ in latitude and 1.5″ in longitude has been applied between the east and west borders of this quadrangle. Positions along the Mobile & Ohio R. R. between Eliza triangulation station, Cairo, and Cache, do not contain this adjustment.

East along highways near north border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks on hillside (approximate Henderson datum)	37 14 26.8	89 04 52.8	
Center of road forks at A. J. Shoenborn's mail box	37 14 10.9	89 04 18.6	3,200
T road west, 1,200 feet south of T road east	37 14 23.0	89 02 40.1	8,049

Southwest along Big Four Route between Grand Chain and Cairo.

Grand Chain, at fence corner 18 feet north of stock pen, on the west side of track, 180 feet north of depot; iron post stamped "Prim. Trav. Sta. No. 15, 1915 Ill. Elev. 405"	37 15 13.5	89 01 11.0	
Trestle 715, center of	37 14 35.8	89 01 55.0	5,192
Railroad crossing at north and south road on line between Rs. 1 and 2 E., 360 feet south of railroad crossing is T road east at west corner of secs. 6 and 7, T. 15 S., R. 2 E	37 13 46.7	89 02 40.5	6,181
MEAN OF HENDERSON AND NORTH AMERICAN DATUM.			
Levings, depot and post office, opposite front door of, center of track	37 13 04.1	89 03 33.2	6,045
Railroad crossing, east and west section-line road	37 12 39.0	89 03 47.4	2,763
Milepost 244, center of track	37,11 32.2	89 04 50.2	8,438
Olmstead, railroad crossing just north of depot, main track	37 10 56.2	89 05 18.0	4,260
Railroad crossing at schoolhouse	37 10 23.3	89 05 43.0	3,880
Railroad crossing just south of milepost 246	37 10 00.7	89 05 58.9	2,600
Milepost 247, center of track	37 09 17.1	89 06 29.7	5,045
Railroad crossing, probable line between secs. 4 and 9, T. 16 S., R. 1 E	37 08 38.8	89 06 56.8	4,435
America, just north of depot, railroad crossing, 45 feet east of line between secs. 8 and 9, T. 16 S., R. 1 E	37 08 01.1	89 07 23.3	4,350
Trestle 751, north end of	37 07 06.9	89 08 01.6	6,285
Railroad crossing, just north of trestle 753	37 06 18.3	89 08 36.6	5,654
Mound City, 100 feet north of Big Four Route depot, on west side of street leading northwest from depot, on east side of cinder sidewalk, at foot of second telephone pole from depot (U. S. C. E. b. m. No. 64)	37 05 04.4	89 09 43.1	9,192
Cache River, railroad trestle 763, north end of	37 04 12.8	89 10 22.2	6,087
Point of switch	37 03 07.7	89 10 50.0	6,945
Cairo, junction of Big Four and Illinois Central railroads, almost directly under shore span of Illinois Central R. R. bridge over Ohio River, 25 feet north and 20 feet west of; iron post stamped "Prim. Trav. Sta. No. 8, 1916, Ill."	37 01 20.4	89 10 51.4	1,827
Cairo, Sycamore Street, center track of Illinois Central R. R. over	37,01 18.5	89 11 08.2	1,370
Cairo Junction, Illinois Central R. R. (third track from east), directly opposite signal-tower building at junction of Mobile & Ohio and Illinois Central railroads	37 02 20.5	89 11 30.0	6,536

Along Mobile & Ohio R. R. from Cairo to Beech Ridge.

NORTH AMERICAN DATUM.			
Eliza Point, 50 feet downstream from second or low switchstand, in line with upstream side of cross levee above sawmill and with center of track above switches; iron pipe, 8 inches above surface of ground, outside of track of Mobile & Ohio R. R. embankment (Miss. R. Comm. triang. sta.)	37 00 31.43	89 11 38.61	
Cairo, junction of Mobile & Ohio and Missouri Pacific railroads	37 01 22.8	89 11 27.8	5,268
Point of switch at north end of Y	37 02 16.6	89 12 07.2	6,308
T. 17 S., R. 1. W., line between secs. 10 and 15, center of main track, in line with east and west road	37 02 26.9	89 12 24.2	1,730
Railroad crossing	37 02 33.3	89 12 34.9	1,080
T. 17 S., R. 1 W., center of track, due south of road forks at road north, probably on line between secs. 9 and 10	37 02 42.8	89 12 48.8	1,485
T. 17 S., R. 1 W., center of track at line between secs. 4 and 9, in line with east and west road, just north of milepost 146	37 03 19.8	89 13 22.5	4,630
Klondike, railroad crossing on Mobile & Ohio R. R.	37 03 38.8	89 13 46.3	2,718
Railroad crossing	37 04 01.4	89 14 15.7	3,304
Railroad crossing just north of milepost 144	37 04 39.3	89 14 43.9	4,457

Magnetic declination near north border of quadrangle, 4° 30′ E.

OREGON QUADRANGLE.

West along highways near north border of quadrangle. (By F. W. Crisp in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 26 N., R. 11 E., corner of secs. 17, 18, 19, and 20, fence line	42 14 49.2	89 15 37.0	
T. 26 N., R. 11 E., quarter corner between secs. 18 and 19, crossroads	42 14 48.8	89 16 12.2	2,645
T. 26 N., R. 11 E., west line of, section corner between secs. 18 and 19, T road east, center of crossroad	42 14 48.5	89 16 48.7	2,745
T. 26 N., R. 10 E., 25 feet south and 30 feet west of corner of secs. 13, 14, 23, and 24, at southwest corner of crossroads, 2 feet west of Wilke Braver's mail box; iron post stamped "Prim. Trav. Sta. No. 1, 1915"	42 14 47.4	89 17 59.0	5,290

South along highways near east border of quadrangle. (By F. W. Crisp in 1917.)

T. 26 N., R. 11 E., west corner of secs. 18, 19, T road east	42 14 48.5	89 16 48.7	
Illinois Central R. R. crossing of public road	42 14 17.0	89 16 47.9	3,190
T. 26 N., R. 10 E., east corner of secs. 24 and 25, crossroads	42 13 56.0	89 16 47.8	2,130
T. 26 N., R. 10 E., east corner of secs. 25 and 36, T road west	42 13 03.7	89 16 47.0	5,290
Township corner and south boundary of Winnebago County, T road north	42 12 11.7	89 16 45.6	5,260
Winnebago County line, crossroad south on	42 12 12.0	89 16 27.0	1,400
Road elbow south and west on county line	42 11 46.3	89 16 26.0	2,601
T road west	42 11 30.4	89 16 25.7	1,606
T. 25 N., R. 11 E., line between secs. 7 and 18, crossroads, 2,690 feet north of bridge over creek	42 10 28.2	89 16 25.6	6,300
T. 25 N., R. 11 E., on line between secs. 18 and 19, crossroads	42 09 35.6	89 16 25.2	5,330
T. 25 N., R. 11 E., on line between secs. 19 and 30, fence line	42 08 43.6	89 16 24.6	5,260
Byron, 1 mile northwest of T road north	42 08 17.3	89 16 24.0	2,660
T road south	42 08 17.4	89 15 55.1	2,180
Byron, 0.5 mile west of Main Street crossing, on west road boundary (at city limit), 20 feet south by 25 feet west of cross streets; iron post stamped "Prim. Trav. Sta. No. 5, 1917"	42 07 35.5	89 15 48.8	4,259
Byron, Main and Bridge streets, intersection	42 07 36.6	89 15 20.3	2,151
Byron bridge, 500 feet south of south end, crossroads	42 07 12.9	89 15 14.2	2,436
T. 24 N., R. 11 E., corner of secs. 5, 6, 7, and 8, T road south, at schoolhouse	42 06 08.5	89 15 29.5	6,520
T road east	42 05 27.4	89 15 45.1	4,328
T. 24 N., Rs. 10 and 11 E., 90 feet south by 30 feet west of corner of secs. 12 and 13, also 50 feet south by 30 feet west of corner of secs. 7 and 18, at T road east; iron post stamped "Prim. Trav. Sta. No. 6, 1917. El. 864"	42 05 14.8	89 16 38.0	4,193
T. 24 N., R. 11 E., corner of secs. 13 and 24, T road west	42 04 23.4	89 16 36.6	5,199
T. 24 N., R. 10 E., quarter corner of sec. 24, T road west	42 03 57.2	89 16 36.2	2,650
T. 24 N., R. 11 E., quarter corner of sec. 19, fence line	42 03 56.6	89 16 36.2	65
T. 24 N., R. 11 E., corner of secs. 19 and 30, T road east	42 03 31.0	89 16 35.5	2,595
T. 24 N., R. 10 E., quarter corner on east side of sec. 25, on range line, 10 feet north by 20 feet east of T road west; iron post stamped "Prim. Trav. Sta. No. 7, 1917. El. 862"	42 03 05.3	89 16 34.7	2,600
T. 24 N., R. 11 E., on township line between secs. 31 and 36, T road north	42 01 46.9	89 16 33.3	7,941
T. 23 N., Rs. 10 and 11 E., corner of secs. 1 and 6, on township line, at angle in road	42 01 46.9	89 16 41.2	600
Crossroads	42 01 18.5	89 16 42.4	2,880
Road forks	42 00 39.5	89 17 01.3	4,192
T. 23 N., Rs. 10 and 11 E., on line between secs. 1 and 6	42 00 29.8	89 16 44.4	1,611

Magnetic declination along east border of quadrangle, 4.0° E.

ROCKFORD QUADRANGLE.

West along highways through center of quadrangle. (By F. W. Crisp in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Roscoe, at southeast corner of Bridge and Main streets; iron post stamped "Prim. Trav. Sta. No. 8, 1915 Ill"	42 24 47.6	89 00 32.8	
Crossing of electric railway, center of track	42 23 31.9	89 00 58.0	7,900
T. 45 N., R. 2 E., corner of secs. 16, 17, 8, and 9	42 23 02.8	89 01 10 1	3,087
T. 45 N., R. 2 E., corner of secs. 16, 17, 20, and 21	42 22 11.1	89 01 09.0	5,240
T roads east, west, and north, center of intersection	42 21 57.3	89 01 08.8	1,390
T. 45 N., R. 2 E., quarter corner between secs. 17 and 20	42 22 09.9	89 01 44.4	2,962
T. 45 N., R. 2 E., corner of secs. 17, 18, 19, and 20	42 22 09.4	89 02 19.8	2,660
T. 45 N., R. 1 E., line between secs. 13 and 24, crossroads	42 22 07.4	89 03 56.0	7,222
T. 45 N., R. 1 E., corner of secs. 13, 14, 23, and 24, crossroads	42 22 07.0	89 04 40.6	3,350
T. 45 N., R. 1 E., corner of secs. 14, 15, 22, and 23, crossroads	42 22 06.5	89 05 48.8	5,120

ROCKFORD QUADRANGLE—Continued.

West along highways through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 45 N., R. 1 E., corner of secs. 15, 16, 21, and 22, crossroads	42 22 05.9	89 06 59.9	5,340
T. 45 N., R. 1 E., corner of secs. 16, 17, 20, and 21, crossroads	42 22 05.5	89 08 10.6	5,310
T. 45 N., R. 1 E., corner of secs. 17, 18, 19, and 20, crossroads	42 22 04.9	89 09 20.6	5,255
T. 45 N., R. 1 E., west corner fractional section between secs. 18 and 19 third principal meridian, T roads north, south, and east, center of intersection	42 22 04.4	89 10 26.9	4,975
T. 27 N., R. 11 E., 15 feet south by 25 feet east of east corner of fractional secs. 1 and 12, on east side of north-south road along third principal meridian; iron post stamped "Prim. Trav. Sta. No. 9, 1915 Ill"	42 21 50.7	89 10 26.2	1,392

South along highways along third principal meridian.

T. 45 N., R. 1 E., T road at quarter corner of sec. 19 (east corner on third principal meridian)	42 21 38.1	89 10 26.4	1,280
T. 45 N., R. 1 E., third principal meridian, west side of secs. 19 and 30, fence	42 21 11.9	89 10 25.7	2,655
T. 27 N., R. 11 E., third principal meridian, east side of fractional section corner between secs. 12 and 13	42 20 58.6	89 10 25.9	1,345
T. 45 N., R. 1 E., third principal meridian, west corner between secs. 30 and 31, center of T road east	42 20 19.7	89 10 25.6	3,935
T. 27 N., R. 11 E., third principal meridian, east side corner between secs. 13 and 24, fence	42 20 06.6	89 10 25.5	1,335
Third principal meridian, township line between Tps. 44 and 45 N., R. 1 E., and west corner between secs. 31 and 6	42 29 27.4	89 10 24.8	3,970
T. 27 N., R. 11 E., third principal meridian, quarter corner on east side of sec. 25, 30 feet north by 30 feet west of, center of intersection at T road west; iron post stamped "Prim. Trav. Sta. No. 1, 1917"	42 18 49.1	89 10 25.4	3,870
T. 44 N., R. 1 E., third principal meridian, west section corner between secs. 6 and 7, fence	42 13 35.6	89 10 24.6	1,378
T. 44 N., R. 1 E., third principal meridian, quarter corner on west side of sec. 7, center of intersection at T road east	42 18 09.4	89 10 24.4	2,650
T. 44 N., R. 1 E., third principal meridian, west section corner between secs. 7 and 18	42 17 43.7	89 10 24.2	2,600
Third principal meridian, line between Tps. 26 and 27 N., R. 11 E.; concrete post marked "Third principal meridian, 10 mi."	42 17 30.1	89 10 24.2	1,380
T. 44 N., R. 1 E., concrete post marked "Third principal meridian, 9 mi." corner of secs. 18 and 19	42 16 50.9	89 10 23.9	3,970
T fence west	42 16 15.6	89 10 23.5	3,573
T. 44 N., R. 1 E., third principal meridian, corner between secs. 19 and 30, concrete post	42 15 59.2	89 10 23.4	1,662
T. 44 N., R. 1 E., third principal meridian, corner of secs. 30 and 31, concrete post, T fence north	42 15 07.1	89 10 23.5	1,405

Magnetic declination through center of quadrangle, 3° E.; along third principal meridian, 4.4° E.

West along highways through center of quadrangle. (By F. W. Crisp in 1917.)

T road south	42 21 57.6	89 00 51.3	.....
T. 45 N., R. 2 E., line between secs. 20 and 21, T road north	42 21 57.3	89 01 08.8	1,316

South along highways near east border of quadrangle. (By F. W. Crisp in 1917.)

T roads east, west, and north, center of intersection	42 21 57.3	89 01 08.8	.....
T roads east, west, and south, center of crossroad	42 21 57.6	89 00 50.9	1,340
T. 45 N., R. 2 E., line between secs. 21 and 28, T roads north, south, and east, center of intersection	42 21 18.4	89 00 52.0	3,969
Harlem, crossroads at	42 20 25.9	89 01 02.8	5,381
T roads north, south, and east	42 19 49.4	89 01 15.3	3,810
Tps. 44 and 45 N., R. 2 E., at sharp bend in road, on township line	42 19 33.2	89 01 21.3	1,700
Tps. 44 and 45 N., R. 2 E., crossroads on town line	44 19 32.9	89 01 42.1	1,488
T roads east, west, and south	42 19 06.6	89 01 44.2	2,673
T 44 N., R. 2 E., quarter corner between secs. 8 and 17, T roads north, south, and east	42 17 48.1	89 01 43.5	7,950
T road west	42 17 08.8	89 01 43.4	3,980
T roads north, south, and west	42 16 36.8	89 01 43.3	3,240
T. 44 N., R. 2 E., quarter corner between secs. 20 and 29, fence	42 16 03.2	89 01 43.2	3,400
T. 44 N., R. 2 E., quarter corner between secs. 29 and 32, 20 feet south by 20 feet west of crossroads, iron post stamped "Prim. Trav. Sta. No. 3, 1917"	42 15 10.7	89 01 43.6	5,319

ROCKFORD QUADRANGLE—Continued.

West along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T 44, N., R. 2 E., corner of secs. 29, 30, 31, and 32, fence south	42 15 10.4	89 02 18.6	2,630
T. 44 N., Rs. 1 and 2 E., corner of secs. 25, 30, 31, and 36, crossroads	42 15 10.0	89 03 26.2	5,090
Rockford, Fourteenth Avenue and Ninth Street center of intersection	42 15 09.5	89 04 50.3	6,320
Rockford, intersection of Fifteenth Avenue and Seminary Street	42 15 04.3	89 05 42.7	3,977
Rockford, east end of highway bridge over Rock River	42 15 04.2	89 06 07.6	1,870

Magnetic declination for east border of quadrangle, 4° E.

THEBES QUADRANGLE.

North along Mobile & Ohio R. R. near east border of quadrangle. (By J. H. Wilson in 1916.

Station.	Latitude.	Longitude.	Distance between stations.
NORTH AMERICAN DATUM.	° ′ ″	° ′ ″	*Feet.*
Beech Ridge, railroad crossing, 1,100 feet south of depot	37 05 33.0	89 15 22.7	.....
Cache, intersection of Mobile & Ohio and Illinois Central railroads	37 06 06.6	89 15 46.9	3,915
Cache, 1.5 miles north of, railroad crossing	37 07 10.5	89 16 30.4	7,363
Railroad crossing, just north of milepost 140	37 07 48.1	89 16 29.1	3,797
Railroad crossing, second-class road	37 08 42.4	89 16 25.3	5,500
Hodges Park (Unity post office), railroad crossing 300 feet north of depot, line between secs. 1 and 36, Tps. 15 and 16 S., R. 2 W.	37 09 30.7	89 16 21.9	4,895
Railroad crossing, 900 feet south of milepost 137	37 10 10.0	89 16 26.9	3,993
T. 15 S., R. 2 W., line between secs. 25 and 36 at second class road crossing, center of track	37 10 23.3	89 16 29.2	1,359
T. 15 S., R. 2 W., line between secs. 24 and 25, railroad crossing	37 11 16.4	89 16 20.6	5,408
T. 15 S., R. 2 W., line between secs. 13 and 24, railroad crossing, at south edge of Sandusky	37 12 09.4	89 16 26.1	5,380
Sandusky, railroad crossing just north of depot	37 12 30.6	89 16 28.8	2,155
T. 15 S., R. 2 W., line between secs. 12 and 13, center of track, 15 feet north of trestle 511–15	37 13 02.7	89 16 29.6	3,249
Tamms, about 150 feet south of depot, 2 feet from high board fence around hotel yard and 20 feet northeast of the southwest corner of this fence; iron post stamped "Prim. Trav. Sta. No. 6, 1916, Ill."	37 14 06.4	89 16 11.3	6,608

Northwest along Illinois Central and Chicago & Eastern Illinois railroads from Cache to Gale.

NORTH AMERICAN DATUM.			
Cache, 110 feet northwest of railroad intersection, at right-angle bend in wagon road, on north side of road, 5 feet west of fence corner; iron post stamped "Prim. Trav. Sta. No. 9, 1916"	37 06 07.2	89 15 48.3	.....
Point of switch	37 06 21.1	89 16 31.2	3,743
Miller's spur, railroad crossing	37 07 29.7	89 17 51.2	9,496
Railroad crossing, about 1,100 feet northwest of sawmill	37 08 27.1	89 18 56.9	7,873
Railroad crossing at second-class road, just north of milepost 138	37 08 44.0	89 19 13.4	2,170
T. 16 S., R. 2 W., line between secs. 3 and 10, center of track, in line with road east	37 09 06.7	89 19 35.6	2,910
Railroad crossing at north and south road, probably on line between secs. 32 and 33, T. 15 S., R. 2 W	37 09 51.9	89 20 38.8	6,863
Olive Branch, 10 feet east of northeast corner of Chicago & Eastern Illinois R. R. station and near edge of platform, on line with south rail of tangent below (northeast of) Olive Branch; iron pipe (Miss. R. Comm. 4 H)	37 10 04.80	89 21 09.39	2,797
T. 15 S., R. 2 W., probable line between secs. 31 and 32, center of track	37 09 50.1	89 21 44.0	3,170
T. 15 S., R. 2 W., probable line between secs. 31 and 36, about 600 feet northwest of milepost 371, center of track, in line with fence north	37 09 47.2	89 22 57.7	5,973
T. 15 S., R. 2 W., probable line between secs. 35 and 36, 700 feet west of milepost 372, railroad crossing	37 09 44.8	89 24 03.8	5,358
Railroad crossing	37 09 41.8	89 25 03.6	4,855
Fayville, intersection of Chicago & Eastern Illinois and Missouri Pacific railroads	37 09 43.4	89 25 19.8	1,318
Point of switch	37 10 29.5	89 26 18.8	6,676
Milepost 2, center of track	37 11 32.7	89 27 06.0	7,444
Milepost 377, center of track	37 12 20.3	89 27 28.8	5,157
Thebes, gable of courthouse (Miss. R. Comm.)	37 13 10.23	89 27 36.10	5,083
Point of switch, west track	37 14 17.9	89 27 18.5	6,993
Gale, railroad crossing, 850 feet below Illinois Central depot	37 14 43.1	89 26 58.6	3,009

THEBES QUADRANGLE—Continued.

Along highways near north border of quadrangle from Thebes to Tamms.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Thebes, center of cross streets at First State Bank	37 13 12.0	89 27 40.2	
Thebes, overhead bridge over Missouri Pacific R. R., west end of	37 13 14.9	89 27 13.0	2,214
Road forks near Beech Grove Church	37 13 22.6	89 26 19.2	4,423
Brownville schoolhouse, 0.5 mile southeast of, on east side of road at road forks, 5 feet southeast of signboard reading "Diswood 7 miles, Olive Branch 5 miles;" iron post stamped "Prim. Trav. Sta. No. 5, 1916 Ill."	37 12 58 9	89 24 48.2	7,739
Large walnut tree on south side of road, opposite barnyard gate	37 13 18.6	89 23 40.5	5,828
Divide on top of ridge, center of road	37 13 23.1	89 22 19.9	6,534
Road forks, 230 feet east of log house	37 13 50.2	89 21 46.9	3,823
Road forks, 30 feet southeast of walnut tree used as corner post of barbed-wire fence	37 14 13.5	89 20 31.5	6,540
Diswood at store and post office, stone in center of road forks	37 13 44.2	89 19 23.6	6,232
Hargis's store, 400 feet north of, lane west	37.13 17.2	89 19 15.6	2,810
Tamms, 2 miles southwest of railroad crossing, Chicago & Eastern Illinois R. R., just north of milepost 13	37.12 45.4	89.17 45.2	7,984
Milepost 14, center of track	37 13 22.4	89 17 05.2	4,950
Prim. Trav. Sta. No. 6 (previously described)	37 14 06.4	89 16 11.3	6,228
Railroad crossing, 560 feet northeast of milepost 16	37 14 37.5	89 15 25.6	4,832

Magnetic declination near north border of quadrangle, 5° 03′ E.

VERMONT QUADRANGLE.

East along highways near south border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 3 N., R. 1 W., quarter corner between secs. 10 and 11, 95 feet north and 18 feet east of, on east side of north-south road; iron post stamped "Prim. Trav. Sta. No. 48, Ill. 1911"	40 15 19.4	90 29 22.2	
T. 3 N., R. 1 W., quarter corner between secs. 11 and 12, center of east and west road, at north and south fence line	40 15 16.6	90 28 09.6	5,636
T. 3 N., Rs. 1 E. and 1 W., quarter corner between secs. 12 and 7, T road north, Schuyler-Fulton county line	40 15 16.0	90 27 01.5	5,284
T. 3 N., R. 1 E., quarter corner between secs. 7 and 8, T road north	40 15 14.5	90 25 52.9	5,320
T. 3 N., R. 1 E., quarter corner between secs. 8 and 9, T road east	40 15 15.0	90 24 44.6	
T. 3 N., R. 1 E., quarter corner between secs. 9 and 10, bend in road, 420 feet east of T road south	40 15 16.1	90 23 37.5	5,210
T road east, center of triangle	40 15 13.3	90 19 52.6	
T. 3 N., R. 2 E., quarter corner between secs. 7 and 8, T road west at Mulberry schoolhouse	40 15 12.6	90 19 02.2	3,905

North along highways near east border of quadrangle.

Tps. 3 and 4 N., R. 2 E., line between secs. 2 and 35, T road south, about 900 feet west of Beaty schoolhouse No. 191	40 16 31.2	90 15 07.4	
T. 4 N., R. 2 E., quarter corner between secs. 26 and 27, crossroads	40 17 49.6	90 15 25.1	8,056
T. 4 N., R. 2 E., corner of secs. 22, 23, 26, and 27, center of north and south road, in line with fence west, large oak tree stands in center of road	40 18 16.2	90 15 24.7	2,689
T. 4 N., R. 2 E., corner of secs. 14, 15, 22, and 23, center of north and south road at east and west fence	40 19 09.6	90 15 23.8	5,411
T. 4 N., R. 2 E., quarter corner between secs. 14 and 15, crossroads	40 19 36.4	90 15 23.3	2,705
T. 4 N., R. 2 E., corner of secs. 10, 11, 14, and 15	40 20 03.1	90 15 22.8	2,705
T. 4 N., R. 2 E., quarter corner between secs. 10 and 11, crossroads	40 20 29.8	90 15 22.2	2,700
T. 4 N., R. 2 E., corner of secs. 2, 3, 10, and 11	40 20 56.4	90 15 21.8	2,700
T. 4 N., R. 2 E., quarter corner in center of sec. 3, T road north	40 21 23.5	90 15 56.0	3,807
Tps. 4 and 5 N., R. 2 E., quarter corner between secs. 3 and 34	40 21 50.0	90 15 54.8	2,680
T. 5 N., R. 2 E., stone corner of secs. 26, 27, 34, and 35, 10 feet north and 3 feet west of, on north side of east and west road at T road south; iron post stamped "Prim. Trav. Sta. No. 12, 1916 Ill"	40 22 43.1	90 15 16.7	6,132
Spoon River, near center of triangle at road forks, 100 feet south of south end of Elrod Bridge	40 23 27.7	90 15 16.8	
Roadforks at B. Barclay's residence	40 25 05.1	90 15 03.6	
Lane east, center of triangle	40 25 45.6	90 15 02.0	4,102
T. 5 N., R. 2 E., corner of secs. 2, 3, 10, and 11, at bend in road, 10 feet north of large oak tree	40 26 11.5	90 15 14.5	2,785

VERMONT QUADRANGLE—Continued.

North along highways near east border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tps. 5 and 6 N., R. 2. E., corner of secs. 2, 3, 34, and 35, T road east, lane west	40 27 05.8	90 15 14.2	5,502
Elm tree at T road west	40 27 25.7	90 15 13.3	2,010
T road east	40 27 45.1	90 16 21.3	5,607
Railroad crossing	40 28 23.8	90 16 20.5	3,914
T. 6 N., R. 2 E., 220 feet east of corner of secs. 21, 22, 27, and 28, at T road south, in center of large triangle; iron post stamped "Prim. Trav. Sta. No. 17, Ill. 1910"	40 28 48.32	90 16 17.21	2,489

West along highways through center of quadrangle.

T. 5 N., R. 2 E., line between secs. 27 and 28, crossroads at Elrod (district 7) schoolhouse	40 22 52.4	90 16 28.5	.....
T. 5 N., R. 2 E., corner of secs. 28, 29, 32, and 33, T road west	40 22 41.4	90 17 36.9	5,410
T. 5 N., R. 2 E., corner of secs. 29, 30, 31, and 32, crossroads at Martin schoolhouse	40 22 41.2	90 18 45.0	5,275
T. 5 N., R. 2 E., west corner of secs. 30, and 31, in line with road east, 40 feet south of above corner is T. 5 N., R. 1 E., east corner of secs. 25 and 36, in line with road west	40 22 41.5	90 19 57.3	5,590
T. 5 N., R. 1 E., T road south, on line between secs. 25 and 26	40 22 51.3	90 21 07.1	5,495
Road forks at Hawthorne schoolhouse	40 22 55.3	90 21 41.9	2,727
T. 5 N., R. 1 E., 20 feet east and several hundred feet south of quarter corner in center of sec. 34, on east side of north and south road at T road west; iron post stamped "Prim. Trav. Sta. No. 13, 1916 Ill."	40 22 08.4	90 22 51.2	7,164
T. 5 N., R. 1 E., line between secs. 33 and 34	40 22 09.2	90 23 25.8	2,680
T. 5 N., R. 1 E., south corner of secs. 32 and 33, bend in road, 65 feet south of above corner is T. 4 N., R. 1 E., north corner of secs. 4 and 5	40 21 51.1	90 24 35.3	5,686
Table Grove, cross streets at Christian Church	40 21 51.8	90 25 26.2	3,940
T. 5 N., R. 1 E., south corner of secs. 31 and 32, T street north in Table Grove, 45 feet west of above corner is T. 4 N., R. 1 E., north corner of secs. 5 and 6	40 21 51.9	90 25. 44.4	1,410
Tps. 4 and 5 N., Rs. 1 E. and 1 W., corner of Fulton and McDonough county line crossroads at Harris Cemetery, the principal meridian	40 21 52.2	90 26 53.8	5,370
T. 5 N., R. 1 W., quarter corner south side of sec. 36, in line with road north, 90 feet east of quarter corner in line with road south	40 21 52.7	90 27 28.4	2,680
T. 5 N., R. 1 W., quarter corner between secs. 25 and 36, T road west	40 22 45.5	90 27 27.9	5,340
T. 5 N., R. 1 W., corner of secs. 25, 26, 35, and 36, fence line at district 87 schoolhouse	40 22 46.4	90 28 02.5	2,684
T. 5 N., R. 1 W., corner of secs. 26, 27, 34, and 35, 25 feet south by 25 feet east of, in southeast corner of T road south; iron post stamped "Prim. Trav. Sta. No. 45, Ill. 1911"	40 22 47.5	90 29 12.5	5,420

Magnetic declination east–west through center of quadrangle, 5° 28′ E.; for south border of quadrangle, 5° 44′ E.; for east border of quadrangle, 5° 12′ E.

WISCONSIN.

PRIMARY TRAVERSE.

Baraboo, Cross Plains, Denzer, Lone Rock, Mazomanie, and White Mound quadrangles.

DANE, IOWA, AND SAUK COUNTIES.

The following geographic positions were determined by primary traverse in 1916 by J. H. Wilson and are based upon primary traverse positions in the Cross Plains quadrangle and upon United States Coast and Geodetic Survey position of Arena Church belfry.

For other positions in Wisconsin see United States Geological Survey Bulletins 201, 245, 276, 310, 440, 551, and 644; also Part I of the Eighteenth and Twenty-first Annual Reports, United States Coast and Geodetic Survey Report for 1911, as well as unpublished records of the United States Coast and Geodetic Survey, Appendix EEE, Report of Chief of Engineers, United States Army, for 1902, and Mississippi River Commission Report for 1885, 1894, and 1895.

BARABOO QUADRANGLE.

Along highways near southwest corner of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Sauk City, at west end of railroad bridge over Wisconsin River, railroad crossing	43 15 56.1	89 43 39.7	.....
T. 9 N., R. 6 E., corner of secs. 11, 12, 13, and 14, crossroads	43 15 50.2	89 44 22.3	3,206

CROSS PLAINS QUADRANGLE.

(By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Primary traverse station No. 11, 1905	43 14 58.5	89 43 30.2	.....
Mount Horeb, north and south railroad crossing, 1,350 feet west of depot	43 00 24.9	89 44 43.6	.....
Primary traverse station No. 9, 1905	43 00 45.5	89 43 48.7	4,583

DENZER QUADRANGLE.

West along highways near south border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 9 N., R. 6 E., line between secs. 14 and 15, bend in road, 15 feet west of small wooden bridge	43 15 06.8	89 45 34.1	.....
T. 9 N., R. 6 E., corner of secs. 10, 11, 14, and 15, crossroads	43 15 49.3	89 45 33.6	4,300
T. 9 N., R. 6 E., corner of secs. 9, 10, 15, and 16, fence north	43 15 50.0	89 46 44.8	5,270
T. 9 N., R. 6 E., corner of secs. 8, 9, 16, and 17, 950 feet east of road forks to Koenig's mill, at north and south fence line, center of road	43 15 49.8	89 47 56.3	5,290
T. 9 N., R. 6 E., 810 feet west of corner of secs. 13, 14, 23, and 24, 90 feet west of road forks at road northwest, 25 feet west of oak tree, on north side of road; iron post stamped "Prim. Trav. Sta. No. 1, 1916, Wis."	43 15 00.0	89 51 38.9	.....
T. 9 N., R. 5 E., 10 feet west of line between secs. 14 and 15, lane south	43 15 02.9	89 52 40.2	4,547
Jacob Mingo's mail box, 20 feet northwest of, T road south	43 15 18.1	89 54 08.9	6,743
Black Hawk, about 2 miles southeast of, at road forks, 4 mail boxes	43 15 25.0	89 54 27.1	1,521
T road west, 10 feet west of mail box on dead oak tree	43 15 01.3	89 54 49.7	2,919
Black Hawk, 1 mile south of, in line with road north, crossroads	43 15 15.0	89 55 47.7	4,514
T. 9 N., R. 5 E., line between secs. 17 and 18, just east of old church building, at north and south fence line, center of road	43 15 20.3	89 56 12.6	1,921
Harrisburg Church, T road southwest at	43 15 21.8	89 56 37.0	1,808
T. 9 N., Rs. 4 and 5 E., on line between secs. 13 and 18, at creamery, T road north	43 15 24.7	89 57 17.6	3,025
T. 9 N., R. 4 E., on line between secs. 13 and 14, road south	43 15 36.8	89 58 30.1	5,500

Magnetic declination for south border of quadrangle, 4° 32′ E.

LONE ROCK QUADRANGLE.

South along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
J. Housladen's mail box, in front of his house, at bend in road just where road crosses top of ridge	43 14 49.8	90 00 37.1	.....
Joseph Frank's mail box, at walnut tree, center of road	43 14 01.4	90 00 56.8	5,114
T. 9 N., R. 4 E., probably on line between secs. 33 and 34, 45 feet southeast of walnut tree in fence corner at east end of row of walnut trees, on north side of road, at J. A. Frank's residence, T road north	43 12 58.2	90 01 05.4	6,430
District 7 schoolhouse, 1,250 feet west of, T road south	43 12 58.2	90 02 20.4	5,556
T. 8 N., R. 4 E., 0.25 mile west of corner of secs. 4, 5, 8, and 9, on line between secs. 5 and 8, crossroads at brick schoolhouse	43 11 24.1	90 02 20.8	9,531
Spring Green, 1.50 miles east of, extreme west end of railroad bridge over Wisconsin River	43 10 27.7	90 02 17.4	5,719
Spring Green, 1.90 miles east of, east end of bridge over Wisconsin River	43 10 26.1	90 01 51.7	1,910
Helena, just west of station, railroad crossing	43 10 23.9	90 01 17.1	2,589
Helena, 0.80 mile south of, T road east	43 09 42.4	90 01 25.8	4,252
T. 8 N., R. 4 E., corner of secs. 15, 16, 21, and 22, in line with fences north, south, and west and road east, at slight bend in road	43 09 42.0	90 00 54.4	2,325
District 5 schoolhouse, about 0.30 mile southwest of, 30 feet northwest of D. Ruggles's mail box, center of road forks at road west	43 03 01.4	90 00 13.6	.....
Mill Creek, just west of cheese factory, 250 feet northwest of road east, at road west by concrete culvert, 4 mail boxes, on wheel	43 02 35.6	90 00 23.8	2,722
Prominent rock, about 20 feet high, in field, about 200 feet north of road and just south of telephone line	43 01 29.6	90 00 01.1	6,893

Magnetic declination for east border of quadrangle, 4° 47′ E.

MAZOMANIE QUADRANGLE.

South along highways near north border of quadrangle. (By J. H. Wilson in 1916.)

Lane south, center of main road at	43 14 53.8	89 49 35.8	.....
Rich's Corner, 0.25 mile north of Rich's schoolhouse, road forks	43 14 51.0	89 50 25.4	3,680
T. 9 N., R. 5 E., approximate corner of secs. 13, 14, 23, and 24, road south	43 14 58.3	89 51 28.3	4,714

MAZOMANIE QUADRANGLE—Continued.

Along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 8 N., R. 4 E., corner of secs. 14, 15, 22, and 23	43 09 42.0	89 59 43.0	.....
T. 8 N., R. 4 E., quarter corner between secs. 14 and 23, T road south	43 09 41.9	89 59 25.2	1,315
T. 8 N., R. 5 E., quarter corner between secs. 19 and 30, center of east and west road, in line with road north, about 820 feet east of Bawden schoolhouse	43 08 48.9	89 56 47.6	.....
T road east at Catholic Church	43 07 38.8	89 57 00.3	7,158
T. 8 N., Rs. 4 and 5 E., line between secs. 31 and 36, center of road at north and south fence line, 190 feet west of road southeast, at cheese factory	43 07 19.6	89 57 20.7	2,463
Road forks, at Mill Creek Church, probably in line between Tps. 7 and 8 N.	43 07 05.4	89 57 50.9	2,654
Mill Creek Church, about 600 feet south of, at northwest corner of road forks; Prim. Trav. Sta. No. 4, 1916 Wis	43 06 59.8	89 57 51.0	595
Road forks, at T. D. Mahoney's mail box, center of triangle	43 05 43.3	89 57 48.1	7,752
Road forks, about 510 feet west of bridge over Mill Creek, at sign board painted "Spring Green 9 M. Arena 8 M."; center of triangle	43 04 53.9	89 58 38.3	6,232
T. 7 N., R. 4 E., line between secs. 14 and 23; center of road at fence west, 580 feet north of T road east at Hyde	43 04 29.7	89 58 51.4	2,636
Hyde, about 1 mile south of, at road west, just south of three mail boxes on east side of road	43 03 58.5	89 59 08.8	3,410

East along highways through center of quadrangle.

T. 8 N., R. 4 E., corner of secs. 13, 14, 23, and 24, in line with road east and fence south	43 09 42.0	89 58 31.4	.....
T. 8 N., Rs. 4 and 5 E., corner of secs. 13, 24, 18, and 19, at fence north, center of east and west road	43 09 42.2	89 57 19.2	5,355
T road south	43 09 41.8	89 56 48.4	2,279
T. 8 N., R. 5 E., corner of secs. 16, 17, 20, and 21, at southwest corner of Arena, T road north	43 09 41.8	89 55 02.3	7,860
Arena, church belfry (U. S. C. & G. S. value)	43 09 50.69	89 54 50.28	1,264
T. 8 N., R. 5 E., 0.25 mile west of corner of secs. 15, 16, 21, and 22, on line between secs. 16 and 21, crossroads	43 09 42.1	89 54 08.9	3,196
T. 8 N., R. 5 E., line between secs. 21 and 28, center of road at fence east	43 08 49.8	89 54 19.7	5,365
T road east	43 08 23.8	89 54 18.2	2,631
T. 8 N., R. 5 E., line between secs. 28 and 33, about 320 feet south of O. Nelson's residence, at fence east, center of road	43 07 58.0	89 54 17.1	2,612
Tps. 7 and 8 N., R. 5 E., line between secs. 4 and 33, 75 feet north of road east, at east and west fence line, center of road	43 07 05.6	89 54 08.8	5,345
T. 7 N., R. 5 E., in northeast part of sec. 4, 180 feet south of road west, on east side of road, at fence corner at road east; iron post stamped "Prim. Trav. Sta. No. 3, 1916 Wis."	43 06 43.9	89 53 51.8	2,538
Tps. 7 and 8 N., R. 5 E., line between secs. 3 and 34, 10 feet north of crossroads	43 07 05.8	89 53 48.8	2,225
T. 8 N., R. 5 E., probably line between secs. 27 and 34, at east and west fence line, center of road	43 07 58.2	89 52 56.3	6,574
T. 8 N., R. 5 E., 1,450 feet east of crossroads, center of northeast and southwest road, in line with road west through center of sec. 25	43 08 25.4	89 50 50.5	9,733
T. 8 N., R. 5 E., line between secs. 25 and 36	43 07 59.3	89 50 46.6	2,655
T road east 0.5 mile southeast of creamery	43 07 37.0	89 50 26.2	2,726
Blue Mound Creek, center of bridge over, 310 feet east of road fork at Lockwood's residence	43 07 15.4	89 49 55.1	3,188
Blue Mound Creek, 1 mile northeast of bridge over, on south side of road, at bend in road at lane north, mail box on fence post	43 07 33.0	89 48 49.7	5,170
T. 8 N., R. 4 E., probably line between secs. 32 and 33, about 150 feet northwest of schoolhouse on top of ridge, at fence north, center of east and west road	43 07 35.4	89 47 56.4	3,964
T. 8 N., R. 4 E., about 1,070 feet south of corner of secs. 27, 28, 33, and 34, at Mr. Kerr's residence, T road west	43 07 50.2	89 46 45.4	5,483
Black Earth, 1.25 miles west of road southwest, center of triangle at road forks	43 08 29.8	89 46 06.1	4,958
Primary Traverse Station No. 10, 1905	43 08 03.80	89 44 58.20	.....

Magnetic declination for north border of quadrangle, 4° 32′ E.; for south border of quadrangle, 4° 57′ E.; for west border of quadrangle, 4° 47′ E.; through center of quadrangle, 5° 05′.

MAZOMANIE QUADRANGLE—Continued.

East along highways and Chicago & North Western Ry. near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks, at road west	43 01 12.9	89 59 45.0	
Ridgeway, northeast edge of, at northwest corner of road forks, 80 feet south of railroad crossing and 270 feet south of cemetery; iron post stamped "Prim. Trav. Sta. No. 5, 1916 Wis."	43 00 19.8	89 59 12.6	5,887
T. 6 N., R. 4 E., line between secs. 11 and 12, railroad crossing, 80 feet south of crossroads	43 00 23.6	89 58 32.3	3,015
T. 6 N., Rs. 4 and 5 E., quarter corner between secs. 7 and 12, center of road, 20 feet west of overhead railroad bridge and 50 feet east of T road north, at cheese factory	43 00 34.3	89 57 22.0	5,338
T. 6 N., R. 5 E., quarter corner between secs. 7 and 8, T lane south, 886 feet east of Junction schoolhouse	43 00 34.4	89 56 14.6	5,015
T. 6 N., R. 5 E., quarter corner in center of sec. 8, T road south	43 00 34.2	89 55 38.7	2,670
T. 6 N., R. 5 E., quarter corner between secs. 8 and 9, center of east and west road, at north and south fence line	43 00 34.2	89 55 03.0	2,655
Barneveld, 1 mile southwest of, railroad crossing signboard reads "Station 1 mile"	43 00 36.4	89 54 44.2	1,422
T. 6 N., R. 5 E., quarter corner between secs. 3 and 10, T road north	43 01 01.0	89 53 16.8	6,954
Barneveld, 1 mile east of, on north side of road at bend in road at foot of hill, 10 feet west of road south and 60 feet west of road north; iron post stamped "Prim. Trav. Sta. No. 6, 1916 Wis."	43 01 01.4	89 52 49.5	2,037
Road forks, road south, 123 feet west of District 8 schoolhouse	43 00 55.1	89 51 27.4	6,131
T. 6 N., Rs. 5 and 6 E., corner of secs. 6, 7, 1, and 12, center of east and west road, 160 feet due south of east side of windmill	43 01 01.8	89 50 18.4	5,177
Blue Mounds, just south of post office, crossing of streets	43 01 02.3	89 49 55.4	1,709
T. 6 N., R. 6 E., 120 feet east of north and south line through center of sec. 8, on railroad, directly under overhead road crossing	43 00 52.9	89 48 33.7	6,148
T. 6 N., R. 6 E., line between secs. 8 and 9, center of railroad track	43 00 51.6	89 48 00.0	2,510
Railroad crossing, 375 feet south of schoolhouse	43 00 25.7	89 47 06.3	4,773
T. 6 N., R. 6 E., north and south road through center of sec. 10	43 00 21.9	89 46 12.8	3,999
T. 6 N., R. 6 E., about 100 feet north of corner of secs. 10, 11, 14, and 15, center of railroad track, in line with road south; 145 feet above second-class railroad crossing	43 00 11.9	89 45 37.6	2,806

Magnetic declination near north border of quadrangle, 4° 32′ E.; near south border of quadrangle, 4° 57′ E.; near west border of quadrangle, 4° 47′ E.; through center of quadrangle, 5° 05′ E.

WHITE MOUND QUADRANGLE.

Along highways near southeast corner of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Schoolhouse, 750 feet west of, road south	43 16 00.7	90 00 00.1	
Plain, about 1.50 miles southeast of, on north side of road, at road forks near creamery, 16 feet southwest of telephone pole, iron post stamped "Prim. Trav. Sta. No. 2, 1916, Wis."	43 16 17.9	90 01 10.3	5,481

DELAVAN QUADRANGLE.

(By F. W. Crisp in 1917, extended from work in Illinois.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 1 N., R. 15 E., quarter corner between secs. 29 and 32, crossroads	42 30 25.1	88 44 49.8	

SHOPIERE QUADRANGLE.

(By F. W. Crisp in 1917, extended from work in Illinois.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 1 N., R. 14 E., quarter corner between secs. 29 and 32, 1,600 feet west of, north side of east-west road, 3 feet from plank fence; iron post stamped "Prim. Trav. Sta. No. 4, 1905" (tie point)	42 30 24.6	88 45 11.5	

MICHIGAN.

PRIMARY TRAVERSE.

BALDWIN, BATTLE CREEK, BAY SHORE, BELLAIRE, BIG PRAIRIE, BIG RAPIDS, CHARLOTTE, COLDWATER, ELK RAPIDS, FIFE LAKE, GALESBURG, GROVE, HASTINGS, HERSEY, HILLSDALE, HOMER, HOWARD CITY, INWOOD, KALKASKA, LEONIDAS, LUTHER, MANTON, MARSHALL, NEWAYGO, NIRVANA, READING, SCHOOLCRAFT, SMYRNA, STURGIS, TORCH LAKE, TUSTIN, UNION CITY, VERMONTVILLE, AND WALKERVILLE QUADRANGLES.

ANTRIM, BARRY, BRANCH, CALHOUN, CHARLEVOIX, EATON, KALAMAZOO, KALKASKA, KENT, MECOSTA, MONTCALM, NEWAYGO, OSCEOLA, TRAVERSE, AND WEXFORD COUNTIES.

In 1916 J. H. Wilson ran a line of primary traverse from Primary Traverse Station No. 1, 1915 (approx. lat. 43° 15′; long. 85° 28′), north to Charlevoix triangulation station of the United States Lake Survey. Distances were measured independently by two sets of chain men, and azimuths were observed at intervals of 8 to 10 miles; the line thus forms a base from which control can be extended over central Michigan.

H. S. Senseney, in 1916, supplemented this work by extending control over Grove, Big Prairie, and White Cloud quadrangles, incidentally locating a few points in Baldwin, Newaygo, Howard City, Nirvana, Smyrna, and Walkerville quadrangles. The work was further extended in 1917 to adjoining quadrangles by Senseney and Oscar Jones.

Positions are given on approximate North American datum. For other positions in Michigan see United States Geological Survey Bulletins 122, 201, 216, 245, 310, 440, 496, 551, and 644. Appendix EEE of Report of the Chief of Engineers, United States Army, for 1902, and unpublished records of the United States Lake Survey, Detroit, Mich., office.

BALDWIN QUADRANGLE.

West along highways near south border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 16 N., R. 12 W., corner of secs. 20, 21, 28, and 29, crossroads at Town Hall	43 45 24.5	85 45 42.7	.....
T. 16 N., R. 12 W., corner of secs. 19, 20, 29, and 30, on south side of road, wooden post	43 45 24.0	85 46 55.5	5,340
T. 16 N., Rs. 12 and 13 W., corner of secs. 19, 30, 24, and 25, fence line north (indefinite)	43 45 23.4	85 48 01.1	4,820
T. 16 N., R. 13 W., corner of secs. 23, 24, 25, and 26, T road north	43 45 22.9	85 49 13.8	5,338
T. 16 N., R. 13 W., corner of secs. 21, 22, 27, and 28, crossroads	43 45 22.5	85 51 37.9	10,575

Magnetic declination for south border of quadrangle, 0° 26′ W.

BATTLE CREEK QUADRANGLE.

East along highways near south border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 2 S., R. 8 W., corner of secs. 27, 28, 33, and 34, crossroads	42 15 39.4	85 14 16.8	
T. 2 S., R. 8 W., corner of secs. 26, 27, 34, and 35, T road south	42 15 39.6	85 13 06.0	5,325
T. 2 S., R. 8 W., corner of secs. 25, 26, 35, and 36, crossroads	42 15 39.4	85 11 55.3	5,320
T. 2 S., Rs. 7 and 8 W., corner of secs. 25, 30, 31, and 36, T road south	42 15 39.5	85 10 45.1	5,280
T. 2 S., R. 7 W., corner of secs. 29, 30, 31, and 32, fence line north, lane south	42 15 39.7	85 09 34.0	5,340
T. 2 S., R. 7 W., corner of secs. 28, 29, 32, and 33, fence line north and south	42 15 39.9	85 08 23.6	5,300
Battle Creek, 3 miles south by 3 miles east of, 20 feet south of corner of secs. 27, 28, 33, and 34, T. 2 S., R. 7 W.; iron post stamped "Prim. Trav. Sta. No. 3, S. 1917"	42 15 40.0	85 07 12.8	5,319
T. 2 S., R. 7 W., corner of secs. 26, 27, 34, and 35, fence line north and south	42 15 40.5	85 06 02.4	5,299
T. 2 S., R. 7 W., corner of secs. 25, 26, 35, and 36, crossroads	42 15 40.9	85 04 51.7	5,311
T. 2 S., Rs. 6 and 7 W., corner of secs. 25, 30, 31, and 36, T road west	42 15 41.4	85 03 41.2	5,300
T. 2 S., Rs. 6 and 7 W., quarter corner between secs. 31 and 36, T road east	42 15 14.8	85 03 40.9	2,690
T. 2 S., R. 6 W., quarter corner between secs. 31 and 32, fence line north and south	42 15 14.4	85 02 32.4	5,150
T. 2 S., R. 6 W., quarter corner between secs. 32 and 33, T road south	42 15 14.0	85 01 21.5	5,330
T. 2 S., R. 6 W., quarter corner between secs. 33 and 34	42 15 13.4	85 00 11.2	5,285

Magnetic declination for south border of quadrangle, 2.0° W.

North along highways near west border (south half) of quadrangle. (By Oscar Jones in 1917.)

Babcock corner, road fork	42 20 52.6	85 14 31.5	
Kalamazoo River, north end of bridge	42 20 36.2	85 14 32.4	1,658
T road north	42 20 18.2	85 14 40.3	1,919
Michigan Central R. R. crossing, center of track	42 19 59.3	85 14 10.8	2,925
Tps. 1 and 2 S., R. 8 W., corner of secs. 3, 4, 33, and 34, T road south	42 19 59.3	85 14 22.1	849
Grand Trunk Ry. crossing, center of north track	42 19 29.8	85 14 21.3	2,990
T. 2 S., R. 8 W., corner of secs. 3, 4, 9, and 10 T road west	42 19 09.1	85 14 20.8	2,090

Magnetic declination, south half of west border of quadrangle, 0.3° W.

East along highways through center of quadrangle. (By Oscar Jones in 1917.)

T road west	42 23 55.5	85 14 09.6	
Bedford, road fork at opposite signboard "Battle Creek 7 mi."	42 23 42.9	85 13 56.9	1,580
T. 1 S., R. 8 W., 0.25 mile north of, quarter corner between secs. 11 and 14, T road west	42 23 42.7	85 12 40 4	5,737
T. 1 S., R. 8 W., quarter corner between secs. 7 and 12, T road west	42 23 56.7	85 10 54.6	8,068
Road fork	42 23 30.4	85 10 32.8	3,124
Do	42 23 04.3	85 10 27.0	2,670
Crossroads	42 22 37.9	85 10 22.5	2,697
T. 1 S., R. 7 W., corner of secs. 17, 18, 19, and 20 crossroads	42 22 37.9	85 09 43.1	2,960
T. 1 S., R. 7 W., quarter corner between secs. 17 and 20	42 22 37.8	85 09 07.4	2,680
Battle Creek, 5 miles north of, on Maple Street road, in triangle of road fork at schoolhouse; iron post stamped "Prim. Trav. Sta. No. 14, 1917"	42 22 37.8	85 08 26.3	3,085
Moore Corners, road fork at	42 22 11.7	85 08 44.0	2,961
Battle Creek, center of concrete bridge over	42 22 11.8	85 07 44.8	4,450
T. 1 S., R. 7 W., quarter corner between secs. 21 and 22, T road west	42 22 11.9	85 07 21.4	1,750
T. 1 S., R. 7 W., 0.25 mile south of corner of secs. 14, 15, 22, and 23, T road west at Penfield	42 22 24.3	85 06 10.5	5,474
Road fork	42 21 55.9	85 05 52.4	3,174
Do	42 21 54.6	85 05 16.9	2,667
T. 1 S., R. 7 W., quarter corner between secs. 25 and 26, T road south	42 21 19.1	85 04 58.1	3,859
T. 1 S., Rs. 6 and 7 W., quarter corner between secs. 25 and 30, T road west	42 21 19.4	85 03 47.6	5,299
T. 1 S., R. 6 W., corner of secs. 30 and 31, T road east, 50 feet north is corner of secs. 25 and 36, T. 1 S., R. 7 W	42 20 52.6	85 03 47.0	2,710
T. 1 S., R. 6 W., corner of secs. 29, 30, 31, and 32, T road north	42 20 52.9	85 02 38.9	5,110
T. 1 S., R. 6 W., corner of secs. 28, 29, 32, and 33, crossroads	42 20 53.4	85 01 28.3	5,300

BATTLE CREEK QUADRANGLE—Continued.

South near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tps. 1 and 2 S., R. 6 W., corner of secs. 4, 5, 32, and 33, crossroads	42 20 01.0	85 01 27.5	5,299
Tps. 1 and 2 S., R. 6 W., corner of secs. 3, 4, 33, and 34, T road south	42 20 01.3	85 00 16.6	5,320
T. 2 S., R. 6 W., corner of secs. 3, 4, 9, and 10, crossroads	42 19 09.9	85 00 15.7	5,200
T. 2 S., R. 6 W., corner of secs. 9, 10, 15, and 16, T road west	42 18 27.5	85 00 14.6	5,300
T. 2 S., R. 6 W., corner of secs. 15, 16, 21, and 22, T road east	42 17 25.1	85 00 13.5	5,310
Crossroads, Verona road	42 16 45.0	85 00 12.3	4,050
Conley, crossroads at	42 16 11.2	85 00 11.7	3,420

Magnetic declination through center of quadrangle, 1.0° W.; magnetic declination for east border of quadrangle, 0.5° W.

North along highways near north half of east border of quadrangle. (By Oscar Jones in 1917.)

Station 600-500	42 20 53.4	85 01 28.3	.....
T. 1 S., R. 6 W., on line between secs. 28 and 29, crossroads	42 21 45.6	85 01 37.5	5,341
Penfield, 4 miles east of, at triangle of road forks; iron post stamped "Prim. Trav. Sta. No. 15, 1917"	42 22 23.4	85 01 38.4	3,823
T. 1 S., R. 6 W., quarter corner between secs. 16 and 17, T road west	42 23 04.1	85 01 31.1	4,159
T road east	42 23 17.0	85 01 31.3	1,310
Road fork	42 23 56.1	85 01 31.9	3,950
Do	42 24 40.2	85 00 48.5	5,526
T. 1 S., R. 6 W., on line between secs. 3 and 4, T road west	42 24 41.9	85 00 21.3	2,048
Road fork	42 24 55.2	85 00 21.2	1,340
T. 1 S., R. 6 W., corner of secs. 3 and 4, on Eaton-Calhoun county line, road fork	42 25 18.6	85 00 21.4	2,370
Road fork	42 25 52.4	85 00 43.0	2,788
Bellevue, at northeast corner of Dyers Hotel, T. 1 N., R. 6 W., quarter corner between secs. 28 and 29, crossroads	42 26 37.2	85 01 05.3	4,830
T. 1 N., R. 6 W., quarter corner between secs. 20 and 21	42 27 29.4	85 01 06.1	5,290
T road east	42 28 08.8	85 01 11.8	4,109
T. 1 N., R. 6 W., on line between secs. 9 and 17, crossroads	42 28 47.9	85 01 17.2	3,982
T road east	42 29 14.4	85 01 20.1	2,690
T. 1 N., R. 6 W., on line between secs. 4 and 9, 40 feet north by 25 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 16, Elev. 967"	42 29 40.8	85 01 20.4	2,678

Magnetic declination north half of east border of quadrangle, 1.40° W.

BAY SHORE QUADRANGLE.

North near west border of quadrangle. (By J. H. Wilson, 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Belvedere, railroad bridge over outlet of Pine Lake, extreme south end of	45 18 51.2	85 14 46.8	.....
Charlevoix, in front of telegraph-office window of depot, center of railroad track	45 19 07.2	85 14 33.3	1,884
T. 34 N., R. 8 W., secs. 13, 14, 23, and 24, crossroads	45 19 59.3	85 14 24.8	5,314
Charlevoix Triangulation Station (a Lake Survey station), situated on top of the highest of a group of sand hills, 1 mile north of Charlevoix, locally known as Mount McSauba. The hill is the farthest north of the group. The station is marked by a square concrete monument, almost at the surface, with a cartridge in the top to mark the geodetic center. A large concrete witness monument, bearing S. 16° 14′ W., 46.2 feet distant, stands 4 inches above the ground in a little swale, 13.1 feet below the station monument. The witness is marked "U. S. 1913," with the head of a 40 d. nail in the center. A 7-inch ash tree bears S. 78° 13′ E., distant 41.2 feet. An 18-inch oak tree bears S. 13° 20′ E., distant 88.7 feet. A 12-inch oak tree bears S. 64° 36′ W., distant 80.6 feet. A 12-inch pine tree bears S. 82° 34′ W., distant 155.8 feet	45 20 05.583	85 14 45.106	1,586

BELLAIRE QUADRANGLE.

In southwest corner of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
East-west road crossing	44 46 01.7	85 12 54.9	.....
T. 27 N., R. 8 W., quarter corner between secs. 1 and 2, crossroads.	44 45 52.7	85 13 54.8	4,416

BIG PRAIRIE QUADRANGLE.

North along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 16 N., R. 10 W., south corner of secs. 33 and 34, T road north; 220 feet east is T. 15 N., R. 10 W., north corner of secs. 3 and 4	43 43 41.9	85 30 13.5	.....
T. 16 N., R. 10 W., corner of secs. 27, 28, 33, and 34, crossroads	43 44 33.4	85 30 13.5	5,215

South along highways near west border of quadrangle. (By H. S. Senseney in 1916.)

T. 16 N., R. 12 W., corner of secs. 25, 26, 35, and 36, crossroads at Jackson schoolhouse	43 44 33.6	85 42 06.0	.....
Tps. 15 and 16 N., R. 12 W., corner of secs. 35, 36, 1, and 2, crossroads	43 43 41.4	85 42 05.4	5,290
T. 15 N., R. 12 W., corner of secs. 1, 2, 11, and 12, east and west fence line	43 42 49.3	85 42 04.1	5,280
T. 15 N., R. 12 W., corner of secs. 11, 12, 13, and 14, T road west	43 41 56.9	85 42 02.8	5,304
T. 15 N., R. 12 W., corner of secs. 13, 14, 23, and 24, east and west fence line	43 41 05.4	85 42 05.1	5,223
T. 15 N., R. 12 W., corner of secs. 23, 24, 25, and 26, crossroads	43 40 13.2	85 42 05.3	5,280
T. 15 N., R. 12 W., corner of secs. 25, 26, 35, and 36, roads north and west	43 39 21.0	85 42 06.1	5,290
Tps. 14 and 15 N., R. 12 W., quarter corner between secs. 2 and 35, T road north	43 38 28.2	85 42 40.3	5,906
Woodville, 2 miles south by 2 miles west of, Tps. 14 and 15 N., R. 12 W., corner of secs. 34, 35, 2, and 3, 25 feet south by 25 feet east of T road south; iron post stamped "Prim. Trav. Sta. No. 19, 1916 Mich."	43 38 27.7	85 43 16.9	2,689
T. 14 N., R. 12 W., corner of secs. 2, 3, 10, and 11, east and west fence line	43 37 37.5	85 43 17.2	5,090
T. 14 N., R. 12 W., corner of secs. 10, 11, 14, and 15, crossroads	43 36 45.8	85 43 17.4	5,240
T. 14 N., R. 12 W., corner of secs. 14, 15, 22, and 23, T road east	43 35 53.7	85 43 17.8	5,270
T. 14 N., R. 12 W., quarter corner between secs. 22 and 23, crossroads	43 35 27.8	85 43 18.0	2,630
T. 14 N., R. 12 W., quarter corner betwen secs. 21 and 22, T road south	43 35 26.5	85 44 29.8	.....
T. 14 N., R. 12 W., corner of secs. 22, 23, 26, and 27, east and west fence line	43 35 01.4	85 43 18.2	.....
T. 14 N., R. 12 W., corner of secs. 26, 27, 34, and 35, crossroads	43 34 09.3	85 43 18.9	5,275
Tps. 13 and 14 N., R. 12 W., corner of secs. 2, 3, 34, and 35, T road south	43 33 16.1	85 43 19.5	5,389
T. 13 N., R. 12 W., corner of secs. 2, 3, 10, and 11, crossroads	43 32 24.7	85 43 20.5	5,207
T road south, about 0.25 mile east of, T. 13 N., R. 12 W., corner of secs. 3, 4, 9, and 10	43 32 24.7	85 44 14.1	3,950
T road west, about 0.25 mile east of, T. 13 N., R. 12 W., corner of secs. 9, 10, 15, and 16	43 31 32.4	85 44 15.3	5,295
T. 13 N., R. 12 W., quarter corner between secs. 14 and 15, T road south	43 31 06.6	85 43 21.6	4,741
Big Prairie, 4 miles west by 1 mile south of, T. 13 N., R. 12 W., quarter corner between secs. 22 and 23, 20 feet south by 20 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 20, 1916 Mich."	43 30 14.1	85 43 22.6	5,317

East along highways near south border of quadrangle.

T. 13 N., R. 12 W., quarter corner between secs. 23 and 24, crossroads at Fry schoolhouse	43 30 15.1	85 42 10.9	5,285
T. 13 N., Rs. 11 and 12 W., quarter corner between secs. 19 and 24, T road west	43 30 15.6	85 40 57.8	5,390
T. 13 N., R. 11 W., quarter corner between secs. 19 and 20, crossroads	43 30 16.6	85 39 45.4	5,335
Big Prairie, 1 mile south of, T. 13 N., R. 11 W., quarter corner between secs. 20 and 21, 18 feet north by 20 feet east of T road west; iron post stamped "Prim. Trav. Sta. No. 25, 1916, Mich."	43 30 16.4	85 38 33.8	5,280

BIG PRAIRIE QUADRANGLE—Continued.

East along highways near south border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 13 N., R. 11 W., corner of secs. 16, 17, 20, and 21, fence line west, opposite Forwood schoolhouse	43 30 42.5	85 38 34.5	2,639
T. 13 N., R. 11 W., quarter corner between secs. 16 and 17, cross-roads at Big Prairie	43 31 08.5	85 38 34.9	2,630
Muskegon River, east end of bridge over	43 30 49.2	85 37 03.8	6,992
T. 13 N., R. 10 W., corner of secs. 17, 18, 19, and 20, crossroads	43 30 41.6	85 32 33.1	.....
T. 13 N., R. 10 W., corner of secs. 16, 17, 20, and 21, T road north	43 30 40.5	85 31 20.8	5,335
T. 13 N., R. 10 W., corner of secs. 15, 16, 21, and 22, T road south	43 30 40.8	85 30 09.1	5,280

East through center of quadrangle. (By H. S. Senseney in 1916.)

Tps. 14 and 15 N., Rs. 11 and 12 W., corner of secs. 1, 6, 31, and 36, T road east	43 38 30.1	85 40 53.2	.....
Tps. 14 and 15 N., R. 11 W., corner of secs. 31, 32, 5, and 6, T road south	43 38 30.4	85 39 44.1	5,084
Tps. 14 and 15 N., R. 11 W., corner of secs. 4, 5, 32, and 33, cross-roads at Free Methodist Church	43 38 30.9	85 38 32.3	5,280
Tps. 14 and 15 N., R. 11 W., corner of secs. 3, 4, 33, and 34, cross-roads	43 38 31.2	85 37 20.2	5,300
Woodville, 4 miles east by 2 miles south of, Tps. 14 and 15 N., R. 11 W., 25 feet north by 25 feet west of corner of secs. 2, 3, 34, and 35; iron post stamped "Prim. Trav. Sta. No. 17, 1916 Mich."	43 38 31.6	85 36 09.1	5,230
T. 15 N., R. 11 W., corner of secs. 26, 27, 34, and 35, at Hatfield schoolhouse, crossroads	43 39 23.3	85 36 08.2	5,229
Hatfield schoolhouse, 1 mile east of, T. 15 N., R. 11 W., corner of secs. 25, 26, 35, and 36, 30 feet south by 25 feet west of T road south; iron post stamped "Prim. Trav. Sta. No. 18, 1916 Mich."	43 39 23.6	85 34 56.8	5,252
T. 15 N., Rs. 10 and 11 W., corner of secs. 30, 31, 25, and 36, stone on north side of road, Mecosta-Newago county line (location indefinite)	43 39 24.2	85 33 44.8	5,291
T. 15 N., R. 10 W., corner of secs. 28, 29, 32, and 33, crossroads	43 39 25.0	85 31 25.5	10,238
Tps. 14 and 15 N., R. 10 W., corner of secs. 32 and 33, T road north (could not locate corner of secs. 4 and 5)	43 38 32.2	85 31 24.8	5,337
T. 14 N., R. 10 W., quarter corner on north side of sec. 4, T road south	43 38 32.0	85 30 46.6	2,803
T. 14 N., R. 10 W., north corner between secs. 3 and 4, T road south	43 38 31.7	85 30 12.7	2,495

Magnetic declination for north border of quadrangle, 0° 41′ W.; for south border of quadrangle, 0° 28′ W., 0° 21′ E.; for west border of quadrangle, 1° 0′ W.; east and west through center of quadrangle, 0° 23′ W.

BIG RAPIDS QUADRANGLE.

North along highways near west border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Mosley, 2 miles west and 1.5 miles north of, T. 13 N., R. 10 W., corner of secs. 14, 15, 22, and 23, 25 feet north by 20 feet east of; at northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 2, 1916 Mich."	43 30 41.8	85 28 57.1	.....
T. 13 N., R. 10 W., corner of secs. 10, 11, 14, and 15, crossroads	43 31 33.4	85 28 57.5	5,218
T. 13 N., R. 10 W., corner of secs. 2, 3, 10, and 11, crossroads	43 32 25.3	85 28 57.6	5,260
T. 14 N., R. 10 W., south corner of secs. 34 and 35, T road north; 230 feet east is T. 13 N., R. 10 W., north corner of secs. 2 and 3	43 33 18.0	85 29 00.0	5,337
T. 14 N., R. 10 W., corner of secs. 26, 27, 34, and 35, east-west fence line	43 34 09.2	85 28 59.8	5,186
T. 14 N., R. 10 W., corner of secs. 22, 23, 26, and 27; crossroads, in line with road north	43 35 00.9	85 29 00.1	5,231
T. 14 N., R. 10 W., line between secs. 14 and 23, T road west	43 35 52.8	85 28 41.8	5,432
Muskegon River, south end of bridge over	43 36 26.6	85 28 49.8	3,464
T. 14 N., R. 10 W., corner of secs. 2, 3, 10, and 11; crossroads	43 37 38.8	85 29 01.2	7,367
Big Rapids, 4 miles south of, 25 feet north of north corner of secs. 2 and 3, T. 14 N., R. 10 W., and 25 feet north by 30 feet west of south corner of secs. 34 and 35, T. 15 N., R. 10 W., at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 3, 1916 Mich."	43 38 31.4	85 29 02.0	5,319
T. 15 N., R. 10 W., corner of secs. 26, 27, 34, and 35, T road east	43 39 23.0	85 29 00.6	5,234
T. 15 N., R. 10 W., corner of secs. 22, 23, 26, and 27; T road east	43 40 10.6	85 29 00.8	4,823

BIG RAPIDS QUADRANGLE—Continued.

North along highways near west border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 15 N., R. 10 W., corner of secs. 14, 15, 22, and 23; crossroads	43 41 02.4	85 29 02.2	5,243
Big Rapids, intersection of State and Maple streets; corner of secs. 10, 11, 14, and 15, T. 15 N., R. 10 W.	43 41 54.2	85 29 03.0	5,245
T. 15 N., R. 10 W., line between secs. 3 and 10, road west	43 42 45.6	85 29 18.1	5,320
Tps. 15 and 16 N., R. 10 W., road west on township line	43 43 41.7	85 29 40.2	5,906

Near west border of quadrangle. (By H. S. Senseney in 1916.)

T. 15 N., R. 10 W., quarter corner on south side of sec. 34, 22 feet east is quarter corner on north side of sec. 3, T. 14 N., R. 10 W., crossroads	43 38 31.4	85 29 37.4	.....

CHARLOTTE QUADRANGLE.

East along highways near south border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tps. 1 and 2 N., R. 6 W., corner of secs. 2, 3, 34, and 35, T road south	42 30 33.8	84 59 39.3	.....
T. 2 N., R. 6 W., corner of secs. 35 and 36, T road north; 50 feet west is corner of secs. 1 and 2, T. 1 N., R. 6 W. at T road south	42 30 34.1	84 58 26.8	5,430
Tps. 1 and 2 N., Rs. 5 and 6 W., corner of secs. 1, 6, 31, and 36, crossroads	42 30 34.0	84 57 15.8	5,320
T. 2 N., R. 5 W., corner of secs. 31 and 32, T road north, 140 feet west is north corner of secs. 5 and 6, T. 1 N., R. 5 W	42 30 34.1	84 56 04.2	5,360
T. 2 N., R. 5 W., corner of secs. 32 and 33, T road north	42 30 34.4	84 54 53.4	5,300
Crossroads	42 30 34.4	84 54 25.6	2,080
Tps. 1 and 2 N., R. 5 W., corner of secs. 3, 4, 33, and 34, 20 feet south by 10 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 18, 1917;" azimuth to concrete silo, 271° 28′, distance 3,500 feet	42 30 34.2	84 53 42.0	3,263
T road south	42 30 34.4	84 52 48.1	4,039
T. 2 N., R. 5 W., corner of secs. 34 and 35, T road north	42 30 34.4	84 52 31.2	1,260
T. 1 N., R. 5 W., corner of secs. 1 and 2, T road south	42 30 34.1	84 51 20.6	5,290
Tps. 1 and 2 N., Rs. 4 and 5 W., at township corner, crossroads	42 30 33.9	84 50 09.2	5,350
T. 1 N., R. 4 W., corner of secs. 5 and 6, T road south, 210 feet west is corner of secs. 31 and 32, T. 2 N., R. 4 W., T road north	42 30 33.6	84 49 00.0	5,180
T. 2 N., R. 4 W., corner of secs. 32 and 33, T road north, 80 feet east is corner of secs. 4 and 5, T. 1 N., R. 4 W., T road south	42 30 33.1	84 47 51.1	5,160
T. 1 N., R. 4 W., 25 feet east to corner of secs. 4, 5, 8, and 9, at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 5, 1909 Mich." (in Marshall quadrangle)	42 29 39.0	84 47 49.7	5,476

Magnetic declination along south border of quadrangle, 1.0° W.

COLD WATER QUADRANGLE.

West along highways near north border of quadrangle. (By H. S. Senseney in 1917.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 5 S., R. 7 W., corner of secs. 26, 27, 34, and 35, T road west	41 59 58.7	85 05 57.1	.....
Union City, 4 miles south by 1 mile east of, 20 feet north by 20 feet west of corner of secs. 27, 28, 33, and 34, T. 5 S., R. 7 W.; iron post stamped "Prim. Trav. Sta. No. 8, S. 1917"	41 59 58.3	85 07 06.9	5,273
T. 5 S., R. 7 W., corner of secs. 28, 29, 32, and 33, T road south	41 59 58.3	85 08 16.2	5,229
T. 5 S., R. 7 W., corner of secs. 29, 30, 31, and 32, crossroads	41 59 58.7	85 09 26.6	5,320
T. 5 S., R. 7 W., west corner of secs. 30 and 31, 20 feet south of 10 feet east of east corner of secs. 25 and 36, T. 5 S., R. 8 W	41 59 58.8	85 10 33.8	5,070

Magnetic declination along north border of quadrangle, 2.0° W.

ELK RAPIDS QUADRANGLE.

North along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 27 N., R. 8 W., quarter corner between secs. 2 and 3, T road north, at W. H. Martin's mail box	44 45 53.0	85 15 07.7	.....
Line between Tps. 27 and 28 N., R. 8 W., crossroads	44 46 21.5	85 15 33.5	3,434
Rapid City, 4 miles south by 0.5 mile east of, 15 feet south by 20 feet west of center of crossroads; iron post stamped "Prim. Trav. Sta. No. 18, Mich. 1915"	44 46 51.4	85 16 22.0	4,627
T road west	44 47 25.4	85 16 39.2	3,660
T. 28 N., R. 8 W., quarter corner in center of sec. 21	44 48 32.4	85 16 57.5	6,915
Railroad crossing	44 48 58.4	85 17 03.7	2,670
Rapid City, opposite telegraph-office window of depot, center of track	44 50 01.6	85 17 04.1	6,400
Road crossing	44 50 43.1	85 17 04.4	4,205
Alden, 1 mile south of, road crossing	44 51 34.7	85 17 02.3	5,231
Alden, opposite window of depot telegraph office, center of track	44 52 43.2	85 16 37.6	7,163
Alden, 1 mile east of, 25 feet east by 25 feet south of quarter corner between secs. 26 and 27, T. 29 N., R. 8 W., center of crossroads; iron post stamped "Prim. Trav. Sta. No. 17, Mich. 1915"	44 52 52.5	85 15 05.6	6,690
T. 29 N., R. 8 W., corner of secs. 22, 23, 26, and 27, crossroads	44 53 18.9	85 15 05.9	2,675
T. 29 N., R. 8 W., corner of secs. 21, 22, 27, and 28, crossroads	44 53 19.0	85 16 19.7	5,314
T. 29 N., R. 8 W., corner of secs. 15, 16, 21, and 22	44 54 11.4	85 16 19.7	5,300
T. 29 N., R. 8 W., corner of secs. 9, 10, 15, and 16, crossroads	44 55 03.8	85 16 19.2	5,315
T. 29 N., R. 8 W., corner of secs. 3, 4, 9, and 10	44 55 56.0	85 16 18.9	5,285
T road south	44 55 59.6	85 16 18.8	370
Clam Lake, south end of iron bridge over Clam River	44 56 32.7	85 17 00.8	4,509
T. 30 N., R. 8 W., quarter corner between secs. 33 and 34, T road north	44 57 13.8	85 16 18.6	5,146
Bellaire, 3 miles west by 1 mile north of, 35 feet north by 25 feet west of corner of secs. 21, 22, 27, and 28, T. 30 N., R. 8 W., center of crossroads; iron post stamped "Prim. Trav. Sta. No. 16, Mich. 1915"	44 58 33.2	85 16 18.6	8,045
T. 30 N., R. 8 W., line between secs. 15 and 22, T road north, 100 feet east of road south	44 59 25.4	85 15 59.6	5,456

FIFE LAKE QUADRANGLE.

Northeast along Grand Rapids & Indiana Ry. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Walton, 190 feet northeast of northeast corner of depot, almost directly opposite southeast corner of post-office building, at fence corner at edge of railroad right of way, on east side of track; U. S. Coast and Geodetic Survey bench-mark tablet No. C 14 set in concrete post stamped "Prim. Trav. Sta. No. 11, 1916"	44 31 14.8	85 24 01.0	.....
T. 25 N., R. 9 W., line between secs. 22 and 27, road crossing	44 32 29.0	85 23 08.4	8,430
North-south road crossing, 1,060 feet southwest of milepost 356	44 33 31.2	85 22 25.2	7,032
Fife Lake, road crossing at depot	44 34 35.2	85 20 55.5	9,173
East-west road crossing	44 35 02.9	85 20 37.4	3,095
East-west road crossing, 1,430 feet northeast of north-south road crossing	44 35 54.3	85 19 46.7	6,36
T. 26 N., R. 8 W., north-south road crossing on line between secs. 31 and 32, at Houseman's siding	44 36 37.8	85 18 43.5	6,347
T. 26 N., R. 8 W., line between secs. 29 and 32, road crossing	44 36 46.2	85 18 27.4	1,445
T. 26 N., R. 8 W., corner of secs. 20, 21, 28, and 29, crossroads	44 37 37.6	85 17 29.1	6,700
South Boardman, just east of road crossing, about 280 feet north of depot, at north end of small park, 25 feet west of water tank; iron post stamped "Prim. Trav. Sta. No. 12, 1916 Mich"	44 38 28.6	85 16 47.8	5,964
Milepost 365, center of track	44 39 23.7	85 15 28.2	8,016

GALESBURG QUADRANGLE.

East along highways near south border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 2 S., Rs. 9 and 10 W., quarter corner between secs. 31 and 36, at crossroads	42 15 09.2	85 24 49.5	.....
T. 2 S., R. 9 W., quarter corner between secs. 31 and 32, crossroads	42 15 09.5	85 23 42.7	5,025
Climax, 1 mile north by 2 miles west of, 15 feet south of quarter corner between secs. 32 and 33, T. 2 S., R. 9 W.; iron post stamped "Prim. Trav. Sta. No. 1, S. 1917"	42 15 09.7	85 22 32.1	5,310
T. 2 S., R. 9 W., quarter corner between secs. 33 and 34, T road south	42 15 10.3	85 21 31.3	5,322
T. 2 S., R. 9 W., quarter corner between secs. 34 and 35, crossroads	42 15 11.0	85 20 11.0	5,284
T. 2 S., R. 8 W., quarter corner between secs. 31 and 32, bend in road (indefinite)	42 15 12.6	85 16 38.1	.....
T. 2 S., R. 8 W., quarter corner between secs. 32 and 33, T road west	42 15 13.0	85 15 27.8	5,290
Battle Creek, 3 miles north by 4 miles west of, 20 feet north by 20 feet east of corner of secs. 28, 29, 32, and 33, T. 2 S., R. 8 W.; iron post stamped "Prim. Trav. Sta. No. 2, S. 1917"	42 15 39.4	85 15 27.6	2,670

Magnetic declination for south border of quadrangle, 2.1° W.

East along highways through center of quadrangle. (By Oscar Jones in 1917.)

Springbrook, 2 miles south of, 28 feet east of corner of secs. 16, 17, 20, and 21, T. 1 S., R. 10 W., at crossroads; iron post stamped "Prim. Trav. Sta. No. 2, Mich. 1915"	42 22 34.4	85 28 40.2	.....
T. 1 S., R. 10 W., quarter corner between secs. 20 and 21, T road east	42 22 08.1	85 29 39.2	2,667
T. 1 S., R. 10 W., quarter corner between secs. 21 and 22, crossroads	42 22 07.8	85 28 29.0	5,270
Richland, 0.5 mile southwest of, crossroads	42 22 07.9	85 27 50.7	2,880
T. 1 S., R. 10 W., quarter corner between secs. 22 and 23, crossroads	42 22 08.1	85 27 18.8	2,390
T. 1 S., R. 10 W., quarter corner between secs. 23 and 24, T road north, 1,340 feet east is T road south	42 22 08.1	85 26 07.9	5,330
T. 1 S., R. 9 W., quarter corner between secs. 19 and 20, T road west	42 22 09.3	85 24 06.6	9,167
Road fork	42 21 53.7	85 23 53.8	1,850
T road west	42 22 02.4	85 23 13.2	3,177
Gull Lake, southeast corner of, at crossroads	42 22 14.4	85 23 13.7	1,210
T road east	42 22 22.2	85 23 11.1	814
T. 1 S., R. 9 W., 0.25 mile south of corner of secs. 16, 17, 20, and 21, T. 1 S., R. 9 W., 15 feet south by 30 feet west of T road north; iron post stamped "Prim. Trav. Sta. No. 10"; azimuth to windmill, 176° 10′ 50″ distant 0.5 mile	42 22 22.0	85 22 38.4	2,460
Crossroads	42 22 27.3	85 21 39.7	4,433
T. 1 S., R. 9 W., 0.25 mile west of corner of secs. 9, 10, 15, and 16, at crossroads	42 23 28.0	85 21 45.9	6,159
T road east	42 23 27.9	85 20 59.2	3,509
T road north	42 23 27.7	85 20 35.2	1,800
T. 1 S., R. 9 W., corner of secs. 11, 12, 13, and 14, T road south	42 23 28.2	85 19 07.4	6,590
T. 1 S., Rs. 8 and 9 W., corner of secs. 12, 13, 7, and 18, T road west, on Calhoun-Kalamazoo county line	42 23 26.7	85 17 56.4	5,329
T. 1 S., Rs. 8 and 9 W., corner of secs. 13, 24, 18, and 19, T road east, on Calhoun-Kalamazoo county line	42 22 35.3	85 17 55.2	5,200
Creek crossing	42 22 35.5	85 17 22.6	2,448
Crossroads, at section corner (not described)	42 22 35.7	85 16 46.6	2,710

South along highways near east border of quadrangle.

T. 1 S., R. 8 W., 20 feet south by 30 feet east of corner of secs. 16, 17, 20, and 21 and crossroads; iron post stamped, "Prim. Trav. Sta. No. 11, 1917"; azimuth to center of concrete silo, 8° 23′ 20″	42 22 35.9	85 15 35.8	.....
T road east, 1,470 feet south is road fork to Kalamazoo, Battle Creek and McCrary corners	42 21 30.2	85 15 34.8	6,649
T. 2 S., R. 8 W., corner of secs. 4, 5, 8, and 9, T road south	42 19 08.3	85 15 30.9	.....
Grand Trunk Ry. crossing, center of north track	42 18 45.8	85 15 30.4	2,280
Mapes Corners road forks, 100 feet west of, at crossroads	42 18 13.4	85 15 29.5	3,270
T. 2 S., R. 8 W., 0.25 mile north of corner of secs. 16, 17, 20, and 21, crossroads	42 17 36.6	85 15 28.7	3,730
T. 2 S., R. 8 W., quarter corner between secs. 20 and 21, T road east	42 16 57.5	85 15 28.3	3,960
T. 2 S., R. 8 W., quarter corner between secs. 28 and 29, crossroads	42 16 05.2	85 15 28.0	5,290
Battle Creek, 3 miles south by 4 miles west of, "Prim. Trav. Sta. No. 2, S. 1917" (previously described)	42 15 39.4	85 15 27.6	2,619

Magnetic declination through center of quadrangle, 0.0°; for south half of east border of quadrangle, 0.3° W.

GALESBURG QUADRANGLE—Continued.

North along highways near east border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Prim. Trav. Sta. No. 11 (previously described)	42 22 35.9	85 15 35.8	
T. 1 S., R. 8 W., 1 mile north of section corner between secs. 8, 9, 16, and 17, crossroads	42 23 42.1	85 15 38.1	6,710
T. 1 S., R 8 W., 1 mile north of, corner of secs. 7, 8, 17, and 18, crossroads	42 23 41.7	85 16 48.0	5,250
T. 1 S., R. 8 W., corner of secs. 5, 6, 7, and 8, crossroads	42 24 20.8	85 16 49.2	3,961
T. 1 S., R. 8 W., corner of secs. 5 and 6, on Calhoun-Barry county line	42 25 12.1	85 16 41.8	5,218
T. 1 N., R. 8 W., center of sec. 32, T road west	42 25 38.0	85 16 41.2	2,620
T. 1 N., R. 8 W., quarter corner between secs. 29 and 32, T road east	42 26 01.8	85 16 40.7	2,410
T. 1 N., R. 8 W., center of sec. 29, T road west	42 26 28.2	85 16 41.1	2,670
Road fork	42 26 31.3	85 16 08.9	2,432
Road fork, west on quarter-section line	42 27 23.3	85 17 00.1	6,516
Banfield, crossroad at, corner of secs. 17, 18, 19, and 20, T. 1 N., R. 8 W	42,27 49.6	85 17 18.8	3,008
T. 1 N., R. 8 W., quarter corner between secs. 17 and 18, crossroads	42 28 15.6	85 17 18.9	2,630
T. 1 N., R. 8 W., corner of secs. 7, 8, 17, and 18	42 28 42.0	85 17 18.9	2,670
T. 1 N., R. 8 W., corner of secs. 5, 6, 7, and 8, T road east	42 29 34.4	85 17 18.8	5,310

West along highways near north border of quadrangle.

T. 1 N., Rs. 8 and 9 W., fence line between secs. 1 and 6, township line	42 29. 59.7	85 18 29.3	
T. 1 N., R. 9 W., center of sec. 1, crossroads	42 29 58.5	85 19 04.6	2,650
T. 1 N., R. 9 W., quarter corner between secs. 1 and 2, T road north	42 29 57.5	85 19 39.8	2,640
T road north	42 29 57.8	85 20 32.8	3,970
T. 1 N., R. 9 W., quarter corner between secs. 3 and 4, T road north	42 29. 58.0	85 22 00.2	6,550
T. 1 N., R. 9 W., 20 feet south by 30 feet west of T road south, center of sec. 5: iron post stamped "Prim. Trav. Sta. No. 13"	42 29 58.8	85 23 45.6	
Delton, crossroads at	42 29. 59.3	85 24 29.6	3,301

Magnetic declination near northeast corner of quadrangle, 0.6° W.

GROVE QUADRANGLE.

East along highways near north border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 13 N., R. 11 W., corner of secs. 22, 23, 26, and 27, T road north	43 29 49.7	85 36 08.9	
Big Prairie, 3 miles east by 1.5 miles south of, T. 13 N., R. 11 W., corner of secs. 23, 24, 25, and 26, 20 feet south by 20 feet west of T road south; iron post stamped "Prim. Trav. Sta. No. 26, 1916 Mich. 855"	43 29 50.0	85 34 57.2	5,284
T. 13 N., Rs. 10 and 11 W., corner of secs. 19, 30, 24, and 25, crossroads, on Newaygo-Mecosta county line	43 29 49.7	85 33 45.3	5,299
T. 13 N., R. 10 W., corner of secs. 19, 20, 29, and 30, T road west	43 29 50.0	85 32 33.2	5,319

West through center of quadrangle. (By H. S. Senseney in 1916.)

T. 12 N., R. 10 W., south corner of secs. 33 and 34, crossroads; 25 feet east is T. 11 N., R. 10 W., north corner of secs. 3 and 4	43 22 52.4	85 30 09.5	
T. 11 N., R. 10 W., north corner of secs. 4 and 5, T road south; 90 feet west is T. 12 N., R. 10 W., south corner of secs. 32 and 33, fence line north	43 22 52.4	85 31 19.7	5,190
T. 12 N., R. 10 W., south corner of secs. 31 and 32, T road north; 160 feet east is T. 11 N., R. 10 W., north corner of secs. 5 and 6, fence line south	43 22 52.8	85 32 32.7	5,390
Tps. 11 and 12 N., Rs. 10 and 11 W., corner of secs. 1, 6, 31, and 36, crossroads, on Newaygo-Montcalm county line	43 22 52.7	85 33 46.4	5,445
Tps. 11 and 12 N., R. 11 W., corner of secs. 1, 2, 35, and 36, T road east	43 22 53.0	85 34 58.0	5,285
T. 12 N., R. 11 W., corner of secs. 25, 26, 35, and 36, crossroads	43 23 45.0	85 34 58.2	5,270

GROVE QUADRANGLE—Continued.

West through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 12 N., R. 11 W., corner of secs. 26, 27, 34, and 35, crossroads	43 23 45.5	85 36 10.2	5,310
Howard City, 7 miles west of, T. 12 N., R. 11 W., corner of secs. 27, 28, 33, and 34, 25 feet north by 25 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 27, 1916, Mich."	43 23 45.3	85 37 20.5	5,194
T. 12 N., R. 11 W., corner of secs. 28, 29, 32, and 33, T road east	43 23 45.1	85 38 32.0	5,279
T. 12 N., R. 11 W., quarter corner between secs. 31 and 32, T road south	43 23 17.8	85 39 44.6	6,028
T. 12 N., Rs. 11 and 12 W., corner of secs. 25, 30, 31, and 36, fence line	43 23 43.6	85 40 58.0	6,020
T. 12 N., R. 12 W., corner of secs. 25, 26, 35, and 36, T road north	43 23 43.5	85 42 09.4	5,270
T. 12 N., R. 12 W., corner of secs. 26, 27, 34, and 35, T road south	43 23 43.3	85 43 21.0	5,290
Little Brook Lake, east side of, T. 12 N., R. 12 W., corner of secs. 27, 28, 33, and 34, 1 foot north of corner post, at old road north; iron post stamped "Prim. Trav. Sta. No. 28, 1916, Mich"	43 23 42.8	85 44 32.6	5,287
Near west border of quadrangle.			
T. 13 N., R. 12 W., corner of secs. 21, 22, 27, and 28, fence line west	43 29 48.0	85 44 35.1	.....
T. 13 N., R. 12 W., corner of secs. 27, 28, 33, and 34, T road north	43 28 55.7	85 44 34.9	5,290
T. 13 N., R. 12 W., corner of secs. 26, 27, 34, and 35, crossroads	43 28 56.1	85 43 23.3	5,279
Tps. 12 and 13 N., R. 12 W., corner of secs. 2, 3, 34, and 35, T road east	43 28 03.8	85 43 23.5	5,298
T. 12 N., R. 12 W., corner of secs. 2, 3, 10, and 11, crossroads	43 27 12.7	85 43 22.9	5,179
T. 12 N., R. 12 W., corner of secs. 10, 11, 14, and 15, T road north	43 26 19.6	85 43 22.5	5,370
T. 12 N., R. 12 W., corner of secs. 15, 16, 21, and 22, T road north	43 25 26.8	85 44 34.2	7,521
T. 11 N., R. 12 W., corner of secs. 21, 22, 27, and 28, crossroads	43 19 21.6	85 44 30.7	.....
T. 11 N., R. 12 W., corner of secs. 27, 28, 33, and 34, crossroads	43 18 29.5	85 44 30.4	5,275
T. 11 N., R. 12 W., south corner of secs. 33 and 34, T road north, on Newaygo-Kent county line	43 17 36.2	85 44 28.7	5,396

Magnetic declination for north border of quadrangle, 0° 28′ W. to 0° 21′ E.; for west border of quadrangle, 0° 52′ W.; east-west through center of quadrangle, 0° 30′ W.

HASTINGS QUADRANGLE.

West along highways near south border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 1 N., R. 8 W., 30 feet south and 30 feet west of crossroads, quarter corner between secs. 5 and 6; iron post stamped "Prim. Trav. Sta. No. 12"	42 30 01.1	85 17 18.5	.....
T. 1 N., R. 9 W., corner of secs. 3 and 4, T road south, 62 feet west of T road north, corner of secs. 33 and 34, T. 2 N., R. 9 W	42 30 29.1	85 22 00.5	.....
Road fork	42 30 29.4	85 22 56.8	4,220
T. 1 N., Rs. 9 and 10 W., T road north, line between secs. 1 and 6	42 30 13.0	85 25 31.8	.....
T. 1 N., R. 10 W., center of road north and road east, at three corners, center of sec. 2	42 30 02.2	85 27 18.6	8,077
Prairieville, crossroads at, quarter corner between secs. 2 and 35, Tps. 1 and 2 N., R. 10 W	42 30 30.5	85 27 18.5	2,870
Prairieville, 2 miles west of, 7 feet east of quarter corner of sec. 4, T. 1 N., R. 10 W., 35 feet south by 30 feet west of center of crossroads; iron post stamped "Prim. Trav. Sta. No. 4, Mich., 1915"	42 30 30.7	85 29 39.2	10,543

Magnetic declination for south border of quadrrangle, 0.4° E.

Along highways near southeast corner of quadrangle. (By Oscar Jones in 1917.)

Tps. 1 and 2 N., R. 8 W., quarter corner between secs. 4 and 33, T road east	42 30 27.9	85 15 33.1	.....
T. 1 N., R. 8 W., center of sec. 4, crossroads	42 30 01.3	85 15 31.6	2,700
Closes on Prim. Trav. Sta. No. 12	42 30 01.1	85 17 18.5	7,931

Magnetic declination near southeast corner of quadrangle, 0.5° W.

HERSEY QUADRANGLE.

In southeast portion of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 16 N., R. 10 W., line between secs. 3 and 10; crossroads	43 48 02.3	85 29 53.8	5,542

HILLSDALE QUADRANGLE.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	′ ′ ″	*Feet.*
T. 5 S., R. 4 W., corner of secs. 26, 27, 34, and 35, crossroads	41 59 59.9	84 44 54.1	.....
Litchfield, 3 miles south and 1.5 miles east of, 42 feet south by 20 feet east of corner of secs. 25, 26, 35, and 36, T. 5 S., R. 4 W., at crossroads; iron post stamped "Prim. Trav. Sta. No. 4, Mich. 1912"	41 59 59.2	84 43 48.9	5,302

HOMER QUADRANGLE.

East along highways near north border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tps. 2 and 3 S., R. 6 W., north corner of secs. 2 and 3, fence south; 6 feet west is south corner of secs. 34 and 35, fence line north	42 14 47.1	84 59 00.2	.....
Tps. 2 and 3 S., R. 6 W., corner of secs. 1, 2, 35, and 36	42 14 47.1	84 57 49.8	5,300
Tps. 2 and 3 S., R. 5 W., corner of secs. 3, 4, 33, and 34, fence line north	42 14 47.6	84 53 13.2	.....
Marshall, 1 mile south by 5 miles east of, 20 feet north by 35 feet west of corner of secs. 2, 3, 34, and 35, Tps. 2 and 3 S., R. 5 W.; iron post stamped "Prim. Trav. Sta. No. 5, 1917"	42 14 48.2	84 52 01.0	5,359
Tps. 2 and 3 S., R. 5 W., corner of secs. 1, 2, 35, and 36, crossroads	42 14 48.1	84 50 51.6	5,289
T. 3 S., Rs. 4 and 5 W., corner of secs. 1, 6, 31, and 36, T road south	42 14 48.4	84 49 40.6	5,340
Tps. 2 and 3 S., R. 4 W., north corner of secs. 5 and 6, fence line south; 20 feet east is south corner of secs. 31 and 32, fence north	42 14 48.3	84 48 54.4	3,480
Tps. 2 and 3 S., R. 4 W., north corner of secs. 4 and 5, fence line south; 10 feet east is south corner of secs. 32 and 33, fence north	42 14 48.2	84 47 43.6	5,320
Albion, intersection of West Erie and South Eaton streets	42 14 34.3	84 45 22.0	10,743
Albion, intersection of North Eaton and West Mulberry streets	42 14 53.9	84 45 22.2	1,990

Magnetic declination along west border of quadrangle, 2.6° W.

South along highways east of west border of quadrangle.

Tps. 2 and 3 S., R. 6 W., corner of secs. 1, 2, 35, and 36	42 14 47.1	84 57 49.8	.....
T. 3 S., R. 6 W., corner of secs. 1, 2, 11, and 12, crossroads	42 13 55.5	84 57 47.8	5,230
T. 3 S., R. 6 W., corner of secs. 11, 12, 13, and 14, fence line east	42 13 03.0	84 57 46.9	5,310
T. 3 S., R. 6 W., corner of secs. 13, 14, 23, and 24, crossroads	42 12 10.7	84 57 46.0	5,300
T road east, on section line between secs. 24, 25, T. 3 S., R. 6 W., the corner is in Lyons Lake	42 11 18.4	84 57 44.5	5,292
T. 3 S., R. 6 W., corner of secs. 25, 26, 35, and 36, T road west	42 10 25.9	84 57 44.8	5,314
Tps. 3 and 4 S., R. 6 W., corner of secs. 1, 2, 35, and 36, crossroads	42 09 33.5	84 57 44.4	5,305
T. 4 S., R. 6 W., corner of secs. 1, 2, 11, and 12, crossroads	42 08 43.8	84 57 44.0	5,040
Marshall, 9 miles south of, 25 feet south by 25 feet east of corner of secs. 11, 12, 13, and 14, T. 4 S., R. 6 W.; iron post stamped "Prim. Trav. Sta. No. 6, S. 1917"	42 07 50.7	84 57 43.2	5,369
T. 4 S., R. 6 W., corner of secs. 13, 14, 23, and 24, T road west	42 06 58.5	84 57 43.1	5,289
Crossroads	42 06 06.0	84 58 26.4	6,236
Tekonsha, crossroads at Home Hotel	42 05 31.8	84 59 10.7	4,813
T road east, on section line between secs. 27 and 34, T. 4 S., R 6 W.	42 05 14.6	84 59 13.6	1,752
T road north, on Branch-Calhoun county line	42 04 21.9	84 59 28.0	5,446

Magnetic declination along west border of quadrangle, 1.9° W.

HOMER QUADRANGLE—Continued.

East along highways through center of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 4 S., R. 6 W., section corner between secs. 10, 11, 14, and 15, fence south	42 07 51.2	84 58 54.8	.....
Crossroads	42 07 51.2	84 58 45.0	745
T. 4 S., R. 7 W., corner of secs. 11, 12, 13, and 14, 25 feet south by 25 feet east of, 9 miles south of Marshall; iron post stamped "Prim. Trav. Sta. No. 6, S. 1917"	42 07 50.7	84 57 43.2	4,657

East along highway near south border of quadrangle from Girard to Litchfield. (By H. S. Senseney in 1917.)

T. 5 S., R. 6 W., corner of secs. 27, 28, 33, and 34, crossroads	42 00 00.1	85 00 02.9	.....
T. 5 S., R. 6 W., corner of secs. 26, 27, 34, and 35	42 00 00.2	84 58 52.4	5,320
T. 5 S., R. 6 W., corner of secs. 25, 26, 35, and 36, crossroads	42 00 00.2	84 57 42.1	5,310
T. 5 S., R. 5 W., corner of secs. 29, 30, 31, and 32, crossroads	42 00 00.1	84 55 26.7	.....
T. 5 S., R. 5 W., corner of secs. 28, 29, 32, and 33, crossroads	42 00 00.3	84 54 16.4	5,305
T. 5 S., R. 5 W., corner of secs. 27, 28, 33, and 34, fence line north and south	42 00 00.5	84 53 05.6	5,345
T. 5 S., R. 5 W., corner of secs. 26, 27, 34, and 35, fence line north and south	42 00 00.4	84 51 55.1	5,320
Quincy, 4 miles north by 2 miles east, 20 feet north by 30 feet west of corner of secs. 25, 26, 35, and 36, T. 5 S., R. 5 W.; iron post stamped "Prim. Trav. Sta. No. 15, S. 1917"	42 00 00.4	84 50 45.3	5,267
T. 5 S., Rs. 4 and 5 W., corner of secs. 25, 30, 31, and 36, crossroads, on Branch-Hillsdale county line	42 00 00.5	84 49 34.3	5,360
T. 5 S., R. 4 W., corner of secs. 29, 30, 31, and 32, fence line north and south	42 00 00.4	84 48 25.0	5,230
T. 5 S., R. 4 W., corner of secs. 28, 29, 32, and 33, crossroads	42 00 00.3	84 47 14.5	5,325
T. 5 S., R. 4 W., corner of secs. 27, 28, 33, and 34, T road south	42 00 00.0	84 46 04.4	5,290

Magnetic declination near southwest corner of quadrangle, 2.5° W.; near southeast corner of quadrangle, 2.25° W.

HOWARD CITY QUADRANGLE.

North along highways near west border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Cedar Springs, 2 miles north by 4 miles east of, 19 feet west by 32 feet south of crossroads and corner of secs. 14, 15, 22, and 23, T. 10 N., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 1, Mich. 1915"	43 14 58.3	85 28 18.3	.....
T. 10 N., R. 10 W., corner of secs. 10, 11, 14, and 15, T road south	43 15 50.8	85 28 18.4	.....
T. 10 N., R. 10 W., corner of secs. 9, 10, 15, and 16, T road east	43 15 50.8	85 29 30.2	5,316
T. 10 N., R. 10 W., corner of secs. 3, 4, 9, and 10; small iron bridge	43 16 43.0	85 29 30.6	5,290
T. 10 N., R. 10 W., north corner of secs. 3 and 4, on Kent-Montcalm county line	43 17 39.6	85 29 31.2	5,734
T. 11 N., R. 10 W., quarter corner between secs. 27 and 34, T road south	43 18 32.2	85 29 34.2	5,328
T. 11 N., R. 10 W., corner of secs. 26, 27, 34, and 35, crossroads	43 18 31.6	85 28 58.2	2,665
T. 11 N., R. 10 W., corner of secs. 22, 23, 26, and 27, crossroads	43 19 23.8	85 28 58.1	5,285
T. 11 N., R. 10 W., corner of secs. 14, 15, 22, and 23, crossroads at Pierson schoolhouse	43 20 15.9	85 28 58.3	5,275
T. 11 N., R. 10 W., quarter corner between secs. 11 and 14; fence east	43 21 08.8	85 28 21.5	6,004
T. 11 N., R. 10 W., quarter corner between secs. 2 and 11, crossroads at Maple Hill schoolhouse	43 22 00.8	85 28 21.2	5,270
Howard City, 1 mile south of, Tps. 11 and 12 N., R. 10 W., quarter corner between secs. 2 and 35, 25 feet north by 20 feet east of, at northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 1, 1916, Mich"	43 22 53.2	85 28 21.4	5,301
Howard City, Grand Rapids & Indiana Ry. crossing, 600 feet south of depot, line between secs. 26, 35, T. 12 N., R. 10 W	43 23 44.8	85 28 15.2	5,251
T. 12 N., R. 10 W., line between secs. 23 and 26, east-west road crossing	43 24 37.2	85 28 00.6	5,409
T. 12 N., R. 10 W., corner of secs. 13, 14, 23, and 24, railroad crossing	43 25 29.3	85 27 46.3	5,380
T. 12 N., R. 10 W., corner of secs. 11, 12, 13, and 14	43 26 21.1	85 27 45.8	5,248
T. 12 N., R. 10 W., corner of secs. 1, 2, 11, and 12	43 27 13.0	85 27 46.0	5,260
Tps. 12 and 13 N., R. 10 W., corner of secs. 1, 2, 35, and 36; cross-roads on Montcalm-Mecosta county line	43 28 05.5	85 27 46.2	5,310
T. 13 N., R. 10 W., corner of secs. 25, 26, 35, and 36, T road west	43 28 57.7	85 27 46.4	5,290
T. 13 N., R. 10 W., corner of secs. 23, 24, 25, and 26, crossroads	43 29 50.0	85 27 46.4	5,300

HOWARD CITY QUADRANGLE—Continued.

East along highways near south border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 10 N., R. 9 W., corner of secs. 16, 17, 20, and 21, T road north	43 15 00.1	85 23 31.8	.....
Lincoln Lake, near north end of, T. 10 N., R. 9 W., corner of secs. 15, 16, 21, and 22, 18 feet east of T road west, iron post stamped "Prim. Trav. Sta. No. 29, 1916, Mich."	43 15 00.1	85 22 20.2	5,304
T. 10 N., R. 9 W., corner of secs. 14, 15, 22, and 23, 25 feet south by 10 feet west of gate	43 15 00.0	85 21 08.7	.....
T. 10 N., R. 9 W., corner of secs. 13, 14, 23, and 24, T road south	43 15 00.6	85 19 57.3	5,280
T. 10 N., Rs. 8 and 9 W., corner of secs. 13, 18, 19, and 24, T road south, on Kent-Montcalm county line	43 15 00.4	85 18 45.2	5,340
Gowen, crossroads at	43 15 06.0	85 17 58.2	3,525
T. 10 N., R. 8 W., corner of secs. 17, 18, 19, and 20, fence line north	43 15 00.3	85 17 32.0	2,026
T. 10 N., R. 8 W., corner of secs. 16, 17, 20, and 21, fence line north and south	43 15 00.5	85 16 20.2	5,310
Greenville, 5 miles north of, 25 feet north by 29 feet west of corner of secs. 15, 16, 21, and 22, T. 10 N., R. 8 W., center of crossroads; iron post stamped "Prim. Trav. Sta. No. 16, Mich. 1915"	43 15 01.1	85 15 09.0	5,267

Near west border of quadrangle.

Cedar Springs, 2 miles north and 4 miles east of, 19 feet west by 32 feet south of crossroads and corner of secs. 14, 15, 22, and 23, T. 10 N., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 1, Mich. 1915"	43 22 53.2	85 28 21.4	.....
Tps. 11 and 12 N., R. 10 W., corner of secs. 2, 3, 34, and 35, crossroads	43 22 52.7	85 28 57.5	2,664

Magnetic declination for south border of quadrangle, 0° 23′ W.

INWOOD QUADRANGLE.

Along highways and Pere Marquette Ry. in southeast corner of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 33 N., R. 8 W., corner of secs. 14, 15, 22, and 23, center of north-south road, at fence east	45 15 00.5	85 15 39.2	.....
Crossroads at schoolhouse and town hall	45 15 39.6	85 15 51.6	4,067
Railroad crossing, east-west road	45 15 39.6	85 15 15.5	2,585
T. 33 N., R. 8 W., line between secs. 2 and 11; crossing of east-west road	45 16 44.6	85 15 16.3	6,583
Second-class road crossing, about 450 feet north of milepost P 17	45 17 46.9	85 15 07.4	6,341

KALKASKA QUADRANGLE.

Along Grand Rapids & Indiana Ry. in northwest corner of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crofton, road crossing at depot	44 40 23.6	85 14 10.6	.....
Crofton, 1 mile northeast of, road crossing on east-west section line	44 41 06.1	85 13 18.8	5,700
North-south road crossing	44 41 35.6	85 12 42.7	3,970
Road crossing, 260 feet southwest of milepost 369	44 41 56.6	85 12 14.8	2,928
Kalkaska, junction of Grand Rapids & Indiana and Pere Marquette railroads, 35 feet north of, 200 feet southeast of Pere Marquette depot; iron post stamped "Prim. Trav. Sta. No. 13, 1916 Mich."	44 43 37.8	85 10 50.8	11,912

LEONIDAS QUADRANGLE.

South along highways near west border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 3 S., R. 10 W., north corner between secs. 4 and 5, at fence line south (nothing found to show that secs, 32 and 33 corner here)	42 14 41.7	85 29 30.6	.....
T. 3 S., R. 10 W., quarter corner on north side of sec. 4, at T road south, 100 feet west is T. 2 S., R. 10 W., south quarter corner of sec. 33, at T road north	42 14 41.7	85 28 55.1	2,665
T. 3 S., R. 10 W., quarter corner between secs. 4 and 9, hedge east	42 13 49.3	85 28 54.4	5,305
T. 3 S., R. 10 W., quarter corner between secs. 9 and 16, fence line east and west	42 12 57.2	85 28 53.7	5,275
T. 3 S., R. 10 W., quarter corner between secs. 16 and 21, T road east	42 12 04.8	85 28 53.6	5,300
T. 3 S., R. 10 W., quarter corner between secs. 20 and 21, crossroads	42 11 38.5	85 29 28.7	3,746
T. 3 S., R. 10 W., corner of secs. 20, 21, 28, and 29, fence line east and west, gate west	42 11 12.3	85 29 28.6	2,650
T. 3 S., R. 10 W., corner of secs. 28, 29, 32, and 33, at crossroads	42 10 20.0	85 29 28.3	5,300
T. 4 S., R. 10 W., quarter corner between secs. 17 and 20, T road south	42 06 52.2	85 29 59.8	.....
T. 4 S., R. 10 W., quarter corner berween secs. 20 and 29, fence line east and west, lane west	42 06 00.0	85 29 58.9	5,290
T. 4 S., R. 10 W., quarter corner between secs. 29 and 32, crossroads	42 05 07.4	85 29 57.9	5,314
T. 4 S., R. 10 W., quarter corner between secs. 32 and 33, T road south	42 04 41.5	85 29 22.1	3,765
Tps. 4 and 5 S., R. 10 W., corner of secs. 32, 33, 4, and 5, fence line east and west	42 04 15.3	85 29 21.6	2,650
T. 5 S., R. 10 W., quarter corner between secs. 4 and 5, T road north	42 03 52.2	85 29 21.2	2,340
Portage Lake station, railroad crossing southeast of	42 03 12.0	85. 29 38. 2	4,266
T. 5 S., R. 10 W., corner of secs. 8, 9, 16, and 17, T road south	42 02 33.3	85 29 19.7	4,148
T. 5 S., R. 10 W., corner of secs. 16, 17, 20, and 21, T road north	42 01 41.2	85 29 19.0	5,280
T. 5 S., R. 10 W., on line between secs. 21 and 28, T road east	42 00 48.8	85 29 00.8	5,479
Mendon, 1.5 miles west of, north side of east and west road, at T road south, 25 feet north of quarter corner between secs. 28 and 29, T. 5 S., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 24, 1913, Mich." (See Bull. 644, p. 304)	42 00 22.7	85 29 18.0	2,940

Magnetic declination for west border of quadrangle, 1.9° W.

East along highways near north border of quadrangle. (By H. S. Senseney in 1917.)

T. 3 S., R. 10 W., north quarter corner of sec. 4, T road south	42 14 41.7	85 28 55.1	.....
T. 3 S., R. 10 W., north corner of secs. 3 and 4, fence line south, 100 feet west is south corner of secs. 33 and 34, fence line north	42 14 41.9	85 28 20.0	2,640
T. 2 S., R. 10 W., south corner of secs. 34 and 35, fence line north, 120 feet east is north corner of secs. 2 and 3, fence south	42 14 42.4	85 27 10.7	5,210
Tps. 2 and 3 S., R. 10 W., corner of secs. 1, 2, 35, and 36, T road west (no offset shown)	42 14 42.8	85 25 59.6	5,350
Tps. 2 and 3 S., R. 9 W., corner of secs. 2, 3, 34, and 35, fence east and west	42 14 44.7	85 20 10.4	.....
Climax, crossroads at monument, T. 3 S., R. 9 W., quarter corner between secs. 2 and 3	42 14 17.3	85 20 09.5	2,775
T. 3 S., R. 9 W., quarter corner between secs. 1 and 2, fence line north and south, gate south	42 14 17.7	85 18 59.2	5,285
T. 3 S., Rs. 8 and 9 W., quarter corner between secs. 1 and 6, T road north, on Kalamazoo-Calhoun county line	42 14 17.8	85 17 48.8	5,295

Magnetic declination for north border of quadrangle, 2.1° W.

North along highways near east border of quadrangle.

Road forks (junction point)	42 06 38.8	85 15 10.9	.....
T. 4 S., R. 8 W., corner of secs. 8, 9, 16, and 17, fence line east and west	42 07 47.3	85 15 20.8	6,979
T. 4 S., R. 8 W., corner of secs. 4, 5, 8, and 9, fence line east and west	42 08 39.6	85 15 21.6	5,295
East Leroy, 1 mile south by 2 miles west of, 25 feet north by 15 feet east of quarter corner between secs. 4 and 5, T. 4 S., R. 8 W.; iron post stamped "Prim. Trav. Sta. No. 10, S. 1917"	42 09 02.4	85 15 21.6	2,300
Tps. 3 and 4 S., R. 8 W., corner of secs. 4, 5, 32, and 33, fence line east and west	42 09 30.8	85 15 22.4	2,874
T. 3 S., R. 8 W., quarter corner between secs. 29 and 32, fence line east and west	42 10 22.8	85 15 58.6	5,937
T. 3 S., R. 8 W., quarter corner between secs. 20 and 29, crossroads	42 11 15.3	85 16 00.3	5,312
T. 3 S., R. 8 W., quarter corner between secs. 17 and 20, fence line east and west	42 12 07.7	85 16 02.2	5,308
T. 3 S., R. 8 W., quarter corner between secs. 8 and 17, crossroads	42 13 00.1	85 16 02.4	5,305
T. 3 S., R. 8 W., corner of secs. 4, 5, 8, and 9, T road east	42 13 53.1	85 15 28.0	5,955
Tps. 2 and 3 S., R. 8 W., corner of secs. 4, 5, 32, and 33, T road east	42 14 46.9	85 15 29.2	5,445

Magnetic declination along east border of quadrangle, 2.3° W.

LEONIDAS QUADRANGLE—Continued.

West along highways through center of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork	42 06 38.8	85 15 10.9	
T. 4 S., R. 8 W., corner of secs. 17, 18, 19, and 20, T road south	42 06 54.7	85 16 30.7	6,230
T. 4 S., Rs. 8 and 9 W., corner of secs. 13, 24, 18, and 19, T road north, on Kalamazoo-Calhoun county line	42 06 54.4	85 17 40.4	5,255
T. 4 S., R. 9 W., corner of secs. 13, 14, 23, and 24, small iron bridge	42 06 54.0	85 18 50.5	5,285
T. 4 S., R. 9 W., corner of secs. 14, 15, 22, and 23, crossroads	42 06 53.7	85 20 00.4	5,270
T. 4 S., R. 9 W., corner of secs. 15, 16, 21, and 22, crossroads at bank of Fulton River	42 06 54.0	85 21 10.5	5,285
Fulton, 1 mile west of, 25 feet south by 30 feet west of corner of secs. 16, 17, 20, and 21, T. 4 S., R. 9 W.; iron post stamped "Prim. Trav. Sta. No. 12, S. 1917"	42 06 53.6	85 22 21.6	5,358
T. 4 S., R. 9 W., corner of secs. 17, 18, 19, and 20, crossroads	42 06 53.6	85 23 31.6	5,280
T. 4 S., R. 9 W., west corner of secs. 18 and 19, T road east	42 06 53.4	85 24 42.6	5,353
T. 4 S., R. 10 W., east corner of secs. 13 and 24, T road west	42 06 54.3	85 24 42.6	95
T. 4 S., R. 10 W., corner of secs. 13, 14, 23, and 24, T road north	42 06 53.5	85 25 53.2	5,327
T. 4 S., R. 10 W., corner of secs. 14, 15, 22, and 23, T road north	42 06 53.2	85 27 03.3	5,285
T. 4 S., R. 10 W., corner of secs. 15, 16, 21, and 22, fence line north-south	42 06 53.2	85 28 14.0	5,330
T. 4 S., R. 10 W., corner of secs. 16, 17, 20, and 21, T road north	42 06 52.5	85 29 24.5	5,315
Vicksburg, 1 mile east of, 200 feet east by 25 feet north of quarter corner between secs. 17 and 20, T. 4 S., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 13, S. 1917"	42 06 52.6	85 29 57.3	2,474
T road south, quarter corner between secs. 17 and 21, T. 4 S., R. 10 W.	42 06 52.2	85 29 59.8	200

Magnetic declination for center of quadrangle, 1.8° W.

West along highways near south border of quadrangle. (By H. S. Senseney in 1917.)

Sherwood, 1 mile north of, 20 feet north by 60 feet west of corner of secs. 21, 22, 27, and 28, T. 5 S., R. 8 W.; iron post stamped "Prim. Trav. Sta. No. 9, S. 1917"	42 00 50.7	85 14 05.7	
T road north	42 00 49.4	85 15 16.1	4,559
T. 5 S., R. 8 W., corner of secs. 19, 20, 29, and 30, T road east	42 00 50.5	85 16 24.8	5,946
T. 5 S., Rs. 8 and 9 W., T road north on Branch–St. Joseph county line	42 00 32.2	85 17 35.4	5,646
Mendon, T. 5 S., R. 10 W., quarter corner between secs. 26 and 27, crossroads at First State Bank	42 00 24.1	85 26 58.5	
Mendon, 1.5 miles west of, Prim. Trav. Sta. No. 24, 1913 Mich. (previously described)	42 00 22.7	85 29 18.0	10,538

Magnetic declination for south border of quadrangle, 1.7° W.

LUTHER QUADRANGLE.

North along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Ashton, 2 miles north of, 20 feet south by 20 feet east of T. 19 N., R. 10 W., corner of secs. 27, 28, 33, and 34, at southeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 6, 1916 Mich."	44 00 09.0	85 30 13.1	
T. 19 N., R. 10 W., corner of secs. 21, 22, 27, and 28, crossroads at Randolph schoolhouse	44 01 00.8	85 30 13.3	5,250
T. 19 N., R. 10 W., corner of secs. 15, 16, 21, and 22, crossroads	44 01 52.5	85 30 13.7	5,230
T. 19 N., R. 10 W., corner of secs. 9, 10, 15, and 16, crossroads at schoolhouse	44 02 43.9	85 30 13.6	5,210
T. 19 N., R. 10 W., corner of secs. 3, 4, 9, and 10, crossroads	44 03 35.0	85 30 13.0	5,175
Tps. 19 and 20 N., R. 10 W., corner of secs. 3, 4, 33, and 34, crossroads	44 04 26.0	85 30 13.7	5,163
T. 20 N., R. 10 W., corner of secs. 27, 28, 33, and 34, T road west at schoolhouse	44 05 17.8	85 30 14.6	5,250
T. 20 N., R. 10 W., corner of secs. 21, 22, 27, and 28, crossroads	44 06 11.4	85 30 16.2	5,428
Tustin, 1 mile north and 2 miles west of, T. 20 N., R. 10 W., 25 feet north by 30 feet west of, corner of secs. 15, 16, 21, and 22, at northwest corner of crossroads at Burdell schoolhouse; iron post stamped "Prim. Trav. Sta. No. 7, 1916, Mich."	44 07 04.2	85 30 17.0	5,350
T. 20 N., R. 10 W., corner of secs. 9, 10, 15, and 16, T road west	44 07 56.0	85 30 16.2	5,246
T. 20 N., R. 10 W., corner of secs. 3, 4, 9, and 10, crossroads at schoolhouse	44 08 48.3	85 30 16.1	5,290
T. 20 N., R. 10 W., north corner of secs. 3 and 4, on Osceola-Wexford county line, T road south	44 09 54.0	85 30 16.4	6,660

POLITECHNIKA GDAŃSKA ZAKŁAD GEOLOGII

MANTON QUADRANGLE.

North along highways and railroad near west border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 22 N., R. 9 W., quarter corner between secs. 29 and 32, T road south	44 16 01.0	85 25 35.7	.....
T. 22 N., R. 9 W., corner of secs. 19, 20, 29, and 30; crossroads at Pine Stump schoolhouse	44 16 52.5	85 26 12.6	5,869
Cadillac, 2 miles north by 3 miles west of center of town, T. 22 N., Rs. 9 and 10 W., 25 feet south and 30 feet west of corner of secs. 19, 30, 24, and 25, at southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 8, 1916 Mich."	44 16 51.9	85 27 28.2	5,502
T. 22 N., Rs. 9 and 10 W., corner of secs. 18, 19, 13, and 24, crossroads	44 17 43.0	85 27 29.7	5,169
T. 22 N., Rs. 9 and 10 W., corner of secs. 7, 18, 12, and 13, crossroads	44 18 34.7	85 27 32.1	5,240
T. 22 N., Rs. 9 and 10 W., corner of secs. 6, 7, 1, and 12, crossroads	44 19 26.5	85 27 33.9	5,250
T. 22 N., R. 10 W., corner of secs. 1, 2, 11, and 12, crossroads	44 19 26.9	85 28 46.5	5,280
Tps. 22 and 23 N., R. 10 W., corner of secs. 1, 2, 35, and 36, crossroads	44 20 19.9	85 28 48.5	5,370
T. 23 N., R. 10 W., approximate corner of secs. 23, 24, 25, and 26, 60 feet south of center of crossroads	44 22 03.9	85 28 47.2	10,525
T. 23 N., R. 10 W., corner of secs. 13, 14, 23, and 24, at southeast corner of schoolhouse yard, center of road in line with fence west	44 22 55.5	85 28 46.8	5,225
T. 23 N., R. 10 W., corner of secs. 11, 12, 13, and 14, crossroads	44 23 47.1	85 28 46.1	5,228
T. 23 N., R. 10 W., 25 feet south by 25 feet east of corner of secs. 1, 2, 11, and 12, at southeast corner of crossroads at Gentle schoolhouse, 4 miles west of Manton; iron post stamped "Prim. Trav. Sta. No. 9, 1916 Mich."	44 24 38.8	85 28 45.4	5,233
T. 23 N., Rs. 9 and 10 W., corner of secs. 6, 7, 1, and 12, T road north	44 24 38.6	85 27 33.4	5,220
T. 23 N., R. 9 W., corner of secs. 5, 6, 7, and 8, crossroads	44 24 38.8	85 26 18.1	5,470
T. 23 N., R. 9 W., corner of secs. 4, 5, 8, and 9, 30 feet south by 30 feet east of, at southeast corner of crossroads, 1 mile west of Manton; iron post stamped "Prim. Trav. Sta. No. 10, 1916 Mich."	44 24 38.8	85 25 05.5	5,271
Tps. 23 and 24 N., R. 9 W., corner of secs. 4, 5, 32, and 33, crossroads	44 25 30.5	85 25 06.3	5,239
T. 24 N., R. 9 W., corner of secs. 28, 29, 32, and 33, T road east, 550 feet north of railroad crossing	44 26 22.8	85 25 04.4	5,290
Haire, railroad crossing at depot, line between secs. 20 and 29, T. 24 N., R. 9 W.	44 27 14.7	85 25 16.7	5,340
Manistee River, north end of railroad bridge over	44 29 50.3	85 25 31.3	15,786

MARSHALL QUADRANGLE.

East along highways near south border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Marshall, 1 mile south by 1.7 miles west of, about 0.25 mile east of quarter corner between secs. 33 and 34, T. 2 S., R. 6 W., 18 feet east of T road west; iron post stamped "Prim. Trav. Sta. No. 4, S. 1917"	42 15 13.5	84 59 53.2	.....
Marshall, T. 2 S., R. 6 W., corner of secs. 25, 26, 35, and 36, at intersection of Kalamazoo and Hughes streets	42 15 39.6	84 57 50.5	.....
Road forks	42 15 13.5	84 56 39.5	5,960
Center of small bridge	42 14 59.5	84 54 08.4	11,447
Closing point, T. 2 S., R. 4 W., corner of secs. 26, 27, 34, and 35, at fence line east (see Bull. 551, p. 192)	42 15 40.6	84 45 23.0	.....

Magnetic declination along south border of quadrangle, 2.6° W.

Albion, 1 mile north of, 40 feet south by 20 feet east of center of crossroads; iron post stamped "Prim. Trav. Sta. No. 2, 1912"	42 15 56.5	84 45 23.2	1,615

South and east along highways in southwest corner of quadrangle. (By Oscar Jones in 1917.)

Road fork	42 16 07.2	84 59 45.9	.....
South end of steel bridge over Kalamazoo River	42 15 29.9	84 59 55.5	2,845
Prim. Trav. Sta. No. 4, S. 1917 (previously described)	42 15 13.5	84 59 53.2	1,668

NEWAYGO QUADRANGLE.

West along highways near north border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Railroad crossing, on line between secs. 29 and 32	43 28 55.0	85 46 24.2	.....
Crossroads	43 28 53.6	85 47 20.0	4,110
T. 13 N., R. 13 W., corner of secs. 25, 26, 35, and 36, crossroads	43 28 52.9	85 49 16.5	8,588
T. 13 N., R. 13 W., corner of secs. 26, 27, 34, and 35, T road east	43 28 52.8	85 50 28.1	5,280
T. 13 N., R. 13 W., corner of secs. 22, 23, 26, and 27, T road south	43 29 45.0	85 50 28.9	5,289
T. 13 N., R. 13 W., corner of secs. 21, 22, 27, and 28, fence line south	43 29 45.1	85 51 41.2	5,325
Fremont, 3 miles east by 2 miles north of, T. 13 N., R. 13 W., 30 feet north by 12 feet east of corner of secs. 20, 21, 28, and 29, T road east; iron post stamped "Prim. Trav. Sta. No. 31, 1916, Mich"	43 29 44.4	85 52 51.6	5,194
T. 13 N., R. 13 W., corner of secs. 19, 20, 29, and 30, T road west	43 29 45.0	85 54 03.2	5,276
T. 13 N., Rs. 13 and 14 W., corner of secs. 19, 24, 25, and 30, crossroads	43 29 45.9	85 55 14.0	5,220
T. 13 N., R. 14 W., corner of secs. 23, 24, 25, and 26, fence line north and south	43 29 46.6	85 56 25.6	5,273
T. 13 N., R. 14 W., corner of secs. 22, 23, 26, and 27, crossroads	43 29 46.5	85 57 37.0	5,265
T. 13 N., R. 14 W., corner of secs. 21, 22, 27, and 28, crossroads	43 29 46.4	85 58 48.1	5,240
Fremont, 2 miles north by 2 miles west of, T. 13 N., R. 14 W., corner of secs. 20, 21, 28, and 29, 20 feet south of T road north; iron post stamped "Prim. Trav. Sta. No. 32, 1916, Mich."	43 29 46.1	85 59 59.3	5,249

Near east border of quadrangle.

T. 12 N., R. 12 W., corner of secs. 16, 17, 20, and 21 T road east	43 25 25.9	85 45 45.3	.....
Newaygo, road forks, north side of highway bridge over Muskegon River	43 25 25.3	85 47 54.1	9,504
Newaygo, 25 feet west of southwest corner of Public Library, large square stone, marked "Lat. N. 43° 25′ 14.16"; Lon. W. Gr. 85° 49′ 3.78", x mark"	43 25 13.6	85 47 57.3	1,213
T. 12 N., R. 12 W., line between secs. 19 and 30, fence line west	43 24 33.8	85 47 13.8	5,151
T road north	43 23 41.6	85 47 13.5	5,290
T. 12 N., R. 12 W., corner of secs. 29, 30, 31, and 32, fence line north	43 23 41.7	85 46 55.6	1,325
T. 12 N., Rs. 12 and 13 W., corner of secs. 25, 30, 31, and 36, T road east	43 23 41.4	85 48 04.0	.....
Tps. 11 and 12 N., Rs. 12 and 13 W., corner of secs. 1, 6, 31, and 36, five corners	43 22 49.3	85 48 04.3	5,280
Tps. 11 and 12 N., R. 12 W., corner of secs. 5, 6, 31, and 32, T road south	43 22 49.0	85 46 55.7	5,070
T. 11 N., R. 12 W., corner of secs. 5, 6, 7, and 8, crossroads	43 21 57.1	85 46 53.4	5,257
T. 11 N., R. 12 W., corner of secs. 4, 5, 8, and 9, crossroads	43 21 57.3	85 45 41.7	5,300
T. 11 N., R. 12 W., corner of secs. 8, 9, 16, and 17, T road west	43 21 05.4	85 45 40.9	5,255
T. 11 N., R. 12 W., corner of secs. 16, 17, 20, and 21, crossroads at town hall	43 20 13.4	85 45 40.5	5,270
T. 11 N., R. 12 W., corner of secs. 20, 21, 28, and 29, crossroads	43 19 21.4	85 45 40.9	5,265
T. 10 N., R. 12 W., north corner of secs. 4 and 5, T road south, on Newaygo-Kent county line	43 17 36.0	85 45 08.8	.....
T. 10 N., R. 12 W., corner of secs. 4, 5, 8, and 9, crossroads	43 16 40.6	85 45 08.0	5,610
T. 10 N., R. 12 W., corner of secs. 8, 9, 16, and 17, crossroads	43 15 48.0	85 45 07.6	5,325

Magnetic declination for east border of quadrangle, 0° 52′ W.; for north border of quadrangle, 0° 56′ W.

NIRVANA QUADRANGLE.

North along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Paris, 1 mile south of, T. 16 N., R. 10 W., 25 feet north by 25 feet west of corner of secs. 21, 22, 27, and 28, at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 4, 1916 Mich."	43 45 25.0	85 30 12.9	.....
Paris, T road west at south edge of; T. 16 N., R. 10 W., corner of secs. 15, 16, 21, and 22	43 46 16.8	85 30 11.7	5,254
T. 16 N., R. 10 W., corner of secs. 9, 10, 15, and 16, T road west at blacksmith shop	43 47 09.0	85 30 10.9	5,278
Tps. 16 and 17 N., R. 10 W., corner of secs. 3, 4, 33, and 34, on Mecosta–Osceola county line, T road north	43 48 55.7	85 30 11.2	5,563
T. 17 N., R. 10 W., corner of secs. 27, 28, 33, and 34, crossroads	43 49 47.1	85 30 12.0	5,200

NIRVANA QUADRANGLE—Continued.

North along highways near east border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 17 N., R. 10 W., corner of secs. 21, 22, 27, and 28, crossroads	43 50 39.7	85 30 12.6	5,330
T. 17 N., R. 10 W., corner of secs. 15, 16, 21, and 22, crossroads	43 51 31.5	85 30 13.0	5,248
Reed City, at southwest corner of yard of Ward schoolhouse, at northwest corner of cross streets; iron post stamped "Prim. Trav. Sta. No. 5, 1916 Mich."	43 52 10.9	85 30 13.1	3,984
T. 17 N., R. 10 W., corner of secs. 3, 4, 9, and 10, crossroads 700 feet north of schoolhouse	43 53 15.2	85 30 11.4	6,509
Tps. 17 and 18 N., R. 10 W., corner of secs. 3, 4, 33, and 34, crossroads	43 54 06.6	85 30 10.8	5,215
T. 18 N., R. 10 W., corner of secs. 27, 28, 33, and 34, crossroads at schoolhouse	43 54 58.0	85 30 11.0	5,205
T. 18 N., R. 10 W., corner of secs. 21, 22, 27, and 28, crossroads at old schoolhouse	43 55 50.0	85 30 11.2	5,230
T. 18 N., R. 10 W., corner of secs. 15, 16, 21, and 22, crossroads at schoolhouse	43 56 42.0	85 30 11.4	5,275
T. 18 N., R. 10 W., corner of secs. 9, 10, 15, and 16, crossroads	43 57 33.3	85 30 11.2	5,200
Ashton, T. 18 N., R. 10 W., corner of secs. 3, 4, 9, and 10, crossroads	43 58 24.7	85 30 11.5	5,205
Tps. 18 and 19 N., R. 10 W., corner of secs. 3, 4, 33, and 34	43 59 17.2	85 30 14.0	5,319

West along highways near south border of quadrangle. (By H. S. Senseney in 1916.)

Paris, 1 mile south of, T. 16 N., R. 10 W., 25 feet north by 25 feet west of corner of secs. 21, 22, 27, and 28, at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 4, 1916 Mich."	43 45 25.0	85 30 12.9	.....
T. 16 N., R. 10 W., corner of secs. 20, 21, 28, and 29, crossroads	43 45 25.1	85 31 24.2	5,235
T. 16 N., R. 10 W., corner of secs. 19, 20, 29, and 30, crossroads	43 45 26.7	85 32 36.8	5,330
T. 16 N., Rs. 10 and 11 W., corner of secs. 19, 30, 24, and 25, crossroads at Shepherd M. E. Church, on Newaygo-Mecosta county line	43 45 26.6	85 33 46.0	5,075
T. 16 N., R. 11 W., corner of secs. 23, 24, 25, and 26, crossroads	43, 45 27.2	85 34 57.2	5,232
T. 16 N., R. 11 W., corner of secs. 22, 23, 26, and 27, crossroads	43 45 25.4	85 36 10.8	5,399
Parks, 1 mile north of, T. 16 N., R. 11 W., 30 feet north by 30 feet west of corner of secs. 21, 22, 27, and 28, crossroads; iron post stamped "Prim. Trav. Sta. No. 15, 1916 Mich."	43 45 25.9	85 37 22.2	5,245
T. 16 N., R. 11 W., corner of secs. 20, 21, 28, and 29, crossroads at Stone schoolhouse	43 45 24.8	85 38 33.3	5,215
T. 16 N., R. 11 W., corner of secs. 19, 20, 29, and 30, T road north	43 45 26.1	85 39 44.0	5,195
T. 16 N., Rs. 11 and 12 W., corner of secs. 19, 30, 24, and 25, crossroads	43 45 26.4	85 40 54.8	5,189
T. 16 N., R. 12 W., corner of secs. 23, 24, 25, and 26, crossroads	43 45 25.8	85 42 06.6	5,270
Bitely, 7 miles east of, T. 16 N., R. 12 W., 30 feet south by 25 feet west of corner of secs. 22, 23, 26, and 27, crossroads; iron post stamped "Prim. Trav. Sta. No. 21, 1916 Mich."	43 45 24.9	85 43 20.0	5,388
T. 16 N., R. 12 W., corner of secs. 21, 22, 27, and 28, old log road south	43 45 24.8	85 44 31.0	5,212

Magnetic declination for south border of quadrangle, 0° 41′ W.

READING QUADRANGLE.

Along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 5 S., R. 5 W., west corner of secs. 30 and 31, crossroads; 15 feet north is T. 5 S., R. 5 W., east corner of secs. 25 and 36	41 59 59.6	84 56 31.4	.....

SCHOOLCRAFT QUADRANGLE.

South along highways near east border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Cornstock, 2 miles south of, 30 feet east of center of T road east, and corner of secs. 29, 30, 31, and 32, T. 2 S., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 1, Mich. 1915"	42 15 34.1	85 30 42.6	.....
Tps. 2 and 3 S., R. 10 W., corner of secs. 5, 6, 31, and 32, T road north	42 14 41.8	85 30 42.8	5,289
T. 3 S., R. 10 W., quarter corner between secs. 29 and 32, T road south	42 10 19.8	85 30 03.6	.....
T. 3 S., R. 10 W., quarter corner south side of sec. 32, T road north (the north quarter corner of sec. 5 could not be found)	42 09 27.5	85 30 03.1	5,290
T. 4 S., R. 10 W., north corner between secs. 5 and 6, roads east and south, 50 feet west is south corner of secs. 31 and 32, fence line north	42 09 27.2	85 30 37.6	2,600
T. 4 S., R. 10 W., corner of secs. 5, 6, 7, and 8; fence line east and west	42 08 37.3	85 30 36.8	5,050
T. 4 S., R. 10 W., between secs. 7 and 8; east and west road crosses west track of Grand Trunk Ry	42 07 44.5	85 31 23.4	6,394
Vicksburg, intersection of South Wilson and East Highway streets.	42 06 52.1	85 31 28.2	5,315
T. 4 S., R. 10 W., corner of secs. 17, 18, 19, and 20, north and south fence line	42 06 52.3	85 30 35.3	3,990

Magnetic declination for east border of quadrangle, 1.9° W.

SMYRNA QUADRANGLE.

East along highways near north border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Cedar Springs, 2 miles north by 4 miles east of, 19 feet west by 32 feet south of crossroads and corner of secs. 14, 15, 22, and 23, T. 10 N., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 1, Mich. 1915"	43 14 58.3	85 28 18.3	.....
T. 10 N., R. 10 W., corner of secs. 13, 14, 23, and 24, crossroads	43 14 58.7	85 27 07.0	5,279
T. 10 N., Rs. 9 and 10 W., corner of secs. 13, 18, 19, and 24, T road west	43 14 59.1	85 25 54.8	5,340
T. 10 N., R. 9 W., corner of secs. 17, 18, 19, and 20, roads east and south, fence line west	43 14 59.8	85 24 43.4	5,283
T road north, 660 feet west is T. 10 N., R. 9 W., corner of secs. 21, 22, 27, and 28, fence line north and south	43 14 07.8	85 22 11.1	.....
T. 10 N., R. 9 W., corner of secs. 22, 23, 26, and 27, fence line east	43 14 07.9	85 21 08.1	4,665

West through center of quadrangle. (By H. S. Senseney in 1916.)

Belding, 2 miles west by 1.5 miles north of, 25 feet south by 31 feet east is quarter corner of sec. 4, T. 8 N., R. 8 W., center of T road south, 25 feet south by 114 feet east is quarter corner of sec. 33, T. 9 N., R. 8 W., center of T road south; iron post stamped "Prim. Trav. Sta. No. 17, Mich. 1915"	43 07 09.4	85 15 46.4	.....
Tps. 8 and 9 N., R. 8 W., corner of secs. 4, 5, 32, and 33, fence line north and south, on Ionia-Montcalm county line	43 07 09.4	85 16 23.7	2,765
Tps. 8 and 9 N., R. 8 W., corner of secs. 5, 6, 31, and 32, fence line north and south, on Ionia-Montcalm county line	43 07 08.4	85 17 35.1	5,295
Tps. 8 and 9 N., Rs. 8 and 9 W., corner of secs. 1, 6, 31, and 36, crossroads at Kent-Ionia-Montcalm county corner	43 07 07.8	85 18 45.8	5,240
T. 9 N., R. 9 W., corner of secs. 35 and 36, crossroads, 50 feet west is T. 8 N., R. 9 W., corner of secs. 1 and 2	43 07 07.3	85 19 57.2	5,295
T road south, 710 feet south is T. 9 N., R. 9 W., corner of secs. 34 and 35, wooden post, 710 feet south by 110 feet west is T. 8 N., R. 9 W., corner of secs. 2 and 3, road south	43 07 14.0	85 21 08.8	5,347
Rockford, 9.75 miles east of, on line between Tps. 8 and 9 N., R. 9 W., secs. 4 and 33, 6 feet north by 18 feet east of T road west; iron post stamped "Prim. Trav. Sta. No. 30, 1916 Mich."	43 07 06.6	85 22 37.6	6,627
T. 9 N., R. 9 W., corner of secs. 32 and 33, fence line north (could not locate corner of secs. 4 and 5)	43 07 06.2	85 23 31.6	4,010
Tps. 8 and 9 N., R. 9 W., corner of secs. 5, 6, 31, and 32, T road west.	43 07 05.8	85 24 43.0	5,293
Tps. 8 and 9 N., Rs. 9 and 10 W., corner of secs. 1, 6, 31, and 36, T road south	43 07 05.3	85 25 53.1	5,196
T. 8 N., R. 10 W., corner of secs. 1 and 2, fence line south, 84 feet west is T. 9 N., R. 10 W., corner of secs. 35 and 36, fence line north.	43 07 04.9	85 27 03.7	5,235
Rockford, 5 miles east of, 15 feet south of T road north and corner of secs. 34 and 35, T. 9 N., R. 10 W.; iron post stamped "Prim. Trav. Sta. No. 6, Mich. 1915"	43 07 04.3	85 28 16.6	5,401

Magnetic declination for north border of quadrangle, 0° 23′ W.; for center (east-west) of quadrangle, 0° 27′ W.

STURGIS QUADRANGLE.

West along highways near north border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 5 S., R. 9 W., corner of secs. 25, 26, 35, and 36, crossroads	41 59 57.9	85 18 45.3	
T. 5 S., R. 9 W., corner of secs. 26, 27, 34, and 35, crossroads	41 59 57.8	85 19 56.1	5,345
Leonidas, 1.5 miles south of, 25 feet north by 30 feet east of corner of secs. 27, 28, 33, and 34, T. 5 S., R. 9 W.; iron post stamped "Prim. Trav. Sta. No. 14, S. 1917"	41 59 57.8	85 21 06.1	5,289
T. 5 S., R. 9 W., corner of secs. 28, 29, 32, and 33, fence line south	41 59 57.4	85 22 17.0	5,359
Road forks, south of bridge over St. Joseph River	41 59 49.3	85 22 34.6	1,569
T. 5 S., R. 9 W., corner of secs. 29, 30, 31, and 32, T road south	41 59 57.2	85 23 27.9	4,103
T. 5 S., Rs. 9 and 10 W., corner of secs. 25, 30, 31, and 36, T road south	41 59 57.1	85 24 37.3	5,240
T. 5 S., R. 10 W., corner of secs. 25, 26, 35, and 36, T road south	41 59 57.0	85 25 47.6	5,315
T. 5 S., R. 10 W., corner of secs. 26, 27, 34, and 35, crossroads	41 59 57.0	85 26 58.1	5,325

Magnetic declination for north border of quadrangle, 1.7° W.

TORCH LAKE QUADRANGLE.

West along highways near north border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 30 N., R. 8 W., line between secs. 10 and 15, T road west	45 00 18.0	85 16 04.7	
T. 30 N., R. 8 W., quarter corner between secs. 9 and 10, bend in road, 800 feet west of schoolhouse	45 00 44.1	85 16 17.2	2,800
T. 30 N., R. 8 W., line between secs. 4 and 9, center of road, 70 feet north of road forks	45 01 10.5	85 16 20.4	2,680
T. 30 N., R. 8 W., north corner of secs. 3 and 4, center of north-south road, in line with old rail fence west	45 02 07.8	85 16 16.5	5,816
Road forks, at road west	45 02 36.6	85 15 34.0	4,223
T. 31 N., R. 8 W., corner of secs. 26, 27, 34, and 35	45 03 00.2	85 15 49.1	2,625
T. 31 N., R. 8 W., corner of secs. 22, 23, 26, and 27, T road west near south edge of Central Lake	45 03 52.2	85 15 49.9	5,268
Cennral Lake, intersection of crossstreets, Central Lake Exchange on southwest corner	45 04 12.9	85 15 50.2	2,100
T. 31 N., R. 8 W., corner of secs. 14, 15, 22, and 23, bend in road	45 04 44.4	85 15 50.4	3,190
T. 31 N., R. 8 W., line between secs. 10 and 15, fence east	45 05 36.3	85 16 10.0	5,435
T. 31 N., R. 8 W., corner of secs. 2, 3, 10, and 11, T road west	45 06 28.4	85 15 51.2	5,449
T. 32 N., R. 8 W., corner of secs. 22, 23, 26, and 27, at northwest corner of crossroads at Ellsworth Church, iron post stamped "Prim. Trav. Sta. No. 14, 1916, Mich."	45 08 53.0	85 15 50.7	14,644
T. 32 N., R. 8 W., corner of secs. 14, 15, 22, and 23, crossroads	45 09 44.6	85 15 49.8	5,232
T. 32 N., R. 8 W., corner of secs. 10, 11, 14, and 15, center of north-south road, at east-west fence line	45 10 36.7	85 15 48.6	5,275
T. 32 N., R. 8 W., corner of secs. 2, 3, 10, and 11, center of north-south road at east-west fence line	45 11 28.9	85 15 47.5	5,290
T. 32 N., R. 8 W., north corner of secs. 2 and 3, T road east, on Antrim-Charlevoix county line	45 12 22.7	85 15 46.5	5,450
T. 33 N., R. 8 W., corner of secs. 26, 27, 34, and 35, crossroad at Phelps Church and schoolhouse	45 13 16.4	85 15 40.0	5,457
T. 33 N., R. 8 W., corner of secs. 22, 23, 26, and 27, center of north-south road at fence east	45 14 08.4	85 15 39.5	5,275
T. 33 N., R. 8 W., 25 feet north by 18 feet east of quarter corner between secs. 22 and 23, at northeast corner of crossroads, iron post stamped "Prim. Trav. Sta. No. 15, 1916 Mich."	45 14 34.8	85 15 39.1	2,666

TUSTIN QUADRANGLE.

North along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 21 N., R. 10 W., south corner of secs. 34 and 35, on Osceola-Wexford county line, T road north	44 09 54.2	85 29 47.1	
T. 21 N., R. 10 W., corner of secs. 26, 27, 34, and 35, district 2 schoolhouse, T road west at	44 10 46.3	85 29 47.8	5,275
T. 21 N., R. 10 W., corner of secs. 22, 23, 26, and 27, fence west	44 11 38.5	85 29 48.5	5,290
T. 21 N., R. 10 W., corner of secs. 14, 15, 22, and 23, Cherry Grove schoolhouse, crossroads at	44 12 30.7	85 29 49.7	5,290
T. 21 N., R. 10 W., line between secs. 11 and 14, center of road at	44 13 23.0	85 29 12.6	5,945
Cadillac, 4 miles west of, at west end of Lake Cadillac, forks of concrete road, poplar tree in center of triangle	44 14 07.2	85 27 20.5	9,305
Cadillac, intersection of Chestnut and Snider streets	44 14 56.3	85 25 32.7	9,289

UNION CITY QUADRANGLE.

South along highways near east border of quadrangle. (By H. S. Senseney in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tps. 4 and 5 S., R. 6 W., corner of secs. 3, 4, 33, and 34, fence line south on Branch-Calhoun county line	42 04 22.0	85 00 04.4	
T. 5 S., R. 6 W., corner of secs. 3, 4, 9, and 10, T road east	42 03 30.2	85 00 04.6	5,242
T. 5 S., R. 6 W., corner of secs. 9, 10, 15, and 16, fence east and west, 655 feet south is T road east	42 02 37.7	85 00 04.4	5,315
Girard, T. 5 S., R. 6 W., corner of secs. 15, 16, 21, and 22, crossroads	42 01 45.0	85 00 03.9	5,335
Girard, 1 mile south of, 15 feet south by 20 feet west of corner of secs. 21, 22, 27, and 28, T. 5 S., R. 6 W.; iron post stamped "Prim. Trav. Sta. No. 7, 1917"	42 00 52.3	85 00 03.8	5,340

Along highways near south border of quadrangle.

T. 5 S., R. 6 W., corner of secs. 20, 21, 28, and 29, at bend in road, fence line west	42 00 52.5	85 01 13.9	5,290
T. 5 S., R. 6 W., corner of secs. 19, 20, 29, and 30, crossroads	42 00 52.4	85 02 24.6	5,336

West along highways near south border of quadrangle.

T. 5 S., Rs. 6 and 7 W., corner of secs. 19, 24, 25, and 30, fence line north	42 00 52.1	85 03 37.2	5,480
T. 5 S., Rs. 6 and 7 W., quarter corner between secs. 25 and 30, T road west	42 00 26.0	85 03 37.0	2,645
T. 5 S., R. 7 W., quarter corner between secs. 25 and 26, fence south	42 00 25.0	85 04 47.8	5,340
T. 5 S., R. 7 W., quarter corner between secs. 26 and 27, T road east	42 00 25.2	85 05 57.5	5,260
T road west	42 00 51.4	85 10 51.8	
T. 5 S., R. 8 W., corner of secs. 23, 24, 25, and 26, T road north	42 00 50.9	85 11 44.3	3,965
T. 5 S., R. 8 W., corner of secs. 22, 23, 26, and 27, T road north	42 00 50.6	85 12 54.6	5,305
Sherwood, 1 mile north of, 20 feet north by 60 feet west of corner of secs. 21, 22, 27, and 28, T. 5 S., R. 8 W., iron post stamped "Prim. Trav. Sta. No. 9, S. 1917"	42 00 50.7	85 14 05.7	5,370

North along highways near west border of quadrangle.

T. 5 S., R. 8 W., corner of secs. 15, 16, 21, and 22, fence line east, 650 feet north of north end of bridge over St. Joseph River	42 01 42.7	85 14 05.6	5,266
T. 5 S., R. 8 W., corner of secs. 9, 10, 15, and 16, fence line east and west	42 02 34.8	85 14 06.2	5,280
T. 5 S., R. 8 W., corner of secs. 3, 4, 9, and 10, fence line east and west, 1,330 feet south of crossroads	42 03 27.1	85 14 07.0	5,290
Tps. 4 and 5 S., R. 8 W., corner of secs. 3, 4, 33, and 34, on Branch-Calhoun county line	42 04 19.1	85 14 07.8	5,265
Athens, cross streets, corner of secs. 27, 28, 33, and 34, T. 4 S., R. 8 W.	42 05 11.2	85 14 08.4	5,270
T. 4 S., R. 8 W., corner of secs. 21, 22, 27, and 28, fence line east and west	42 06 03.4	85 14 09.0	5,290

Magnetic declination along east border of quadrangle, 1.9° W.; along south border of quadrangle, 2.0° W.; along west border of quadrangle, 2.1° W.

East along highways through center of quadrangle. (By H. S. Senseney in 1917.)

T. 4 S., R. 8 W., quarter corner between secs. 3 and 4, fence line north and south	42 09 06.0	85 14 12.0	
T. 4 S., R. 8 W., quarter corner between secs. 2 and 3, T road north	42 09 07.2	85 13 01.5	5,314
T road west	42 09 08.2	85 12 26.4	2,645
T road east	42 08 42.1	85 12 30.4	2,654
T. 4 S., R. 8 W., corner between secs. 1, 2, 11, and 12, fence line north-south	42 08 42.9	85 11 51.0	2,970
T. 4 S., R. 8 W., east corner of secs. 1 and 12, T road west, 75 feet north is west corner of secs. 6 and 7, T. 4 S., R. 7 W., T road east	42 08 42.3	85 10 40.5	5,310
Abscota, T. 4 S., R. 7 W., corner of secs. 5, 6, 7, and 8	42 08 43.8	85 09 32.4	5,135
T road south	42 08 44.5	85 08 39.0	4,025
T. 4 S., R. 7 W., corner of secs. 4, 5, 8, and 9, fence line north and south	42 08 44.7	85 08 21.3	1,335
T road north	42 08 44.7	85 08 03.5	1,335
T. 4 S., R. 7 W., corner of secs. 3, 4, 9, and 10, crossroads	42 08 44.6	85 07 10.1	4,025
Crossroads, quarter corner	42 08 44.5	85 06 34.5	2,680
T. 4 S., R. 7 W., corner secs. 2, 3, 10, and 11, fence line north and south	42 08 44.3	85 05 59.0	2,680
T road south	42 08 44.6	85 05 05.5	4,025

UNION CITY QUADRANGLE—Continued.

East along highways through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Burlington, 2.5 miles north of, 12 feet south by 30 feet east of corner of secs. 1, 2, 11, and 12, T. 4 S., R. 7 W.; iron post stamped "Prim. Trav. Sta. No. 11, S. 1917"	42 08 44.6	85 04 47.2	1,385
T. 4 S., Rs. 6 and 7 W., corner of secs. 1, 6, 7, and 12, T road north	42 08 44.2	85 03 37.0	5,285
Road forks	42 08 35.7	85 03 14.3	1,915
T. 4 S., Rs. 6 and 7 W., corner of secs. 7, 12, 13, and 18, T road east	42 07 51.4	85 03 37.2	4,802
T. 4 S., R. 6 W., corner of secs. 7, 8, 17, and 18, T road south	42 07 51.9	85 02 24.9	5,450
T. 4 S., R. 6 W., section corner between secs. 8, 9, 16, and 17, fence line north and south	42 07 52.1	85 01 14.4	5,310
Crossroads	42 07 52.0	85 00 38.9	2,680
T. 4 S., R. 6 W., corner of secs. 9, 10, 15, and 16, fence line north and south	42 07 52.1	85 00 04.2	2,615

Magnetic declination through center of quadrangle, 1.7° W.

VERMONTVILLE QUADRANGLE.

West along highways near south border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads	42 30 33.5	85 00 54.0	
Tps. 1 and 2 N., R. 6 W., corner of secs. 4, 5, 32, and 33, crossroads	42 30 33.1	85 01 59.9	4,940
T road north	42 30 32.9	85 02 53.2	3,990
Tps. 1 and 2 N., R. 6 W., corner of secs. 5, 6, 31, and 32, T road south	42 30 32.9	85 03 12.3	1,430
Tps. 1 and 2 N., Rs. 6 and 7 W., at township corner, crossroads	42 30 32.8	85 04 26.0	5,520
Tps. 1 and 2 N., R. 7 W., corner of secs. 1, 2, 35, and 36, crossroads	42 30 32.1	85 05 36.3	5,269
Tps. 1 and 2 N., R. 7 W., corner of secs. 2, 3, 34, and 35, crossroads	42 30 31.6	85 06 47.2	5,310
Tps. 1 and 2 N., R. 7 W., corner of secs. 3, 4, 33, and 34, 50 feet west by 20 feet south of crossroads; iron post stamped "Prim. Trav. Sta. No. 17, 1917"	42 30 31.1	85 07 58.5	5,340
T. 2 N., R. 7 W., on line between secs. 32 and 33, T road north	42 30 38.7	85 09 09.9	5,402
Tps. 1 and 2 N., R. 7 W., corner of secs. 5, 6, 31, and 32, T road south	42 30 30.4	85 10 20.9	5,387
Tps. 1 and 2 N., R. 7 W., quarter corner between secs. 6 and 31, T road north	42 30 30.2	85 10 55.8	2,610
Tps. 1 and 2 N., R. 8 W., quarter corner between secs. 1 and 36, T road north	42 30 29.8	85 12 01.5	4,920
Tps. 1 and 2 N., R. 8 W., quarter corner between secs. 2 and 35, crossroads	42 30 29.2	85 13 12.4	5,311
Tps. 1 and 2 N., R. 8 W., corner of secs. 2, 3, 34, and 35, T road north	42 30 28.9	85 13 47.8	2,650

Magnetic declination along south border of quadrangle, 0.8° W.

WALKERVILLE QUADRANGLE.

North along highways near east border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 13 N., R. 14 W., corner of secs. 16, 17, 20, and 21, crossroads	43 30 39.0	86 00 00.1	
T. 13 N., R. 14 W., corner of secs. 8, 9, 16, and 17, crossroads	43 31 31.1	86 00 00.4	5,270
T. 13 N., R. 14 W., corner of secs. 4, 5, 8, and 9, crossroads	43 32 22.6	86 00 00.4	5,220
Tps. 13 and 14 N., R. 14 W., corner of secs. 4, 5, 32, and 33, crossroads	43 33 14.9	86 00 00.4	5,295
T. 14 N., R. 14 W., corner of secs. 28, 29, 32, and 33, crossroads	43 34 06.8	86 00 00.3	5,253
T. 14 N., R. 14 W., corner of secs. 29, 30, 31, and 32, crossroads, 1 mile east of Hesperia	43 34 07.3	86 01 12.0	5,279
T. 14 N., R. 14 W., corner of secs. 17, 18, 19, and 20, crossroads	43 35 51.4	86 01 11.5	10,542
T. 14 N., R. 14 W., corner of secs. 7, 8, 17, and 18, crossroads	43 36 43.4	86 01 10.5	5,270
Hesperia, 4 miles north by 1 mile east of, T. 14 N., R. 14 W., corner of secs. 5, 6, 7, and 8, 25 feet south by 25 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 24, 1916 Mich"	43 37 36.2	86 01 10.7	5,350

WALKERVILLE QUADRANGLE—Continued.

North along highways near east border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tps. 14 and 15 N., R. 14 W., corner of secs. 5, 6, 31, and 32, T road east	43 38 28.4	86 01 11.7	5,290
T. 15 N., R. 14 W., corner of secs. 29, 30, 31, and 32, crossroads	43 39 20.1	86 01 11.7	5,236
T. 15 N., R. 14 W., corner of secs. 19, 20, 29, and 30, T road east	43 40 13.5	86 01 11.5	5,409
T. 15 N., R. 14 W., corner of secs. 17, 18, 19, and 20, T road west	43 41 06.2	86 01 10.4	5,335
T. 15 N., R. 14 W., corner of secs. 7, 8, 17, and 18, crossroads at Volney	43 41 58.1	86 01 10.7	5,260
T. 15 N., R. 14 W., corner of secs. 5, 6, 7, and 8, T road east	43 42 50.0	86 01 10.8	5,265
Tps. 15 and 16 N., R. 14 W., corner of secs. 5, 6, 31, and 32, crossroads	43 43 41.6	86 01 10.8	5,225
Volney, 3 miles north of, T. 16 N., R. 14 W., corner of secs. 29, 30, 31, and 32, 30 feet south by 30 feet east of crossroads at Troy schoolhouse; iron post stamped "Prim. Trav. Sta. No. 23, 1916 Mich."	43 44 34.1	86 01 09.4	5,320

Magnetic declination for east border of quadrangle, 0° 45′ W.

WHITE CLOUD QUADRANGLE.

West along highways near north border of quadrangle. (By H. S. Senseney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Biteley, 18 feet south by 18 feet east of crossroads, west of post office; iron post stamped "Prim. Trav. Sta. No. 22, 1916 Mich".	43 44 49.2	85 51 37.0	.....
T. 16 N., R. 13 W., quarter corner between secs. 28 and 33, T road north	43 44 30.0	85 51 55.5	2,378
T. 16 N., R. 13 W., section line between secs. 31 and 32, point is 65 feet north of fence corner	43 43 51.4	85 54 00.3	9,962
T. 16 N., R. 14 W., corner of secs. 25, 26, 35, and 36, T road south	43 44 32.0	85 56 22.8	11,242
Pere Marquette River, east end of bridge over	43 44 36.6	85 57 46.8	6,181
T. 16 N., R. 14 W., corner of secs. 27, 28, 33, and 34, fence line north	43 44 32.3	85 58 46.8	4,432
T. 16 N., R. 14 W., corner of secs. 28, 29, 32, and 33, crossroads	43 44 33.7	85 59 58.2	5,239

East through center of quadrangle.

T. 14 N., R. 14 W., corner of secs. 27, 28, 33, and 34, crossroads	43 34 06.6	85 58 48.9	.....
T. 14 N., R. 14 W., corner of secs. 26, 27, 34, and 35, crossroads	43 34 07.2	85 57 37.2	5,280
T. 14 N., R. 14 W., corner of secs. 22, 23, 26, and 27, corner stone	43 34 59.4	85 57 37.2	5,280
T. 14 N., R. 14 W., corner of secs. 23, 24, 25, and 26, crossroads	43 34 59.5	85 56 25.5	5,282
T. 14 N., Rs. 13 and 14 W., corner of secs. 19, 24, 25, and 30, T road east, north of bridge at Aetna	43 34 58.3	85 55 14.3	5,239
T. 14 N., Rs. 13 and 14 W., corner of secs. 13, 18, 19, and 24, T road east	43 35 50.1	85 55 14.8	5,240
T. 14 N., Rs. 13 and 14 W., corner of secs. 7, 12, 13, and 18, crossroads	43 36 42.1	85 55 14.9	5,270
T. 14 N., R. 13 W., corner of secs. 7, 8, 17, and 18, fence line south	43 36 43.7	85 54 03.9	5,224
Aetna, 2 miles north by 2 miles east of, T. 14 N., R. 13 W., corner of secs. 8, 9, 16, and 17, 18 feet north by 18 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 33, 1916 Mich."	43 36 44.9	85 52 49.2	5,500
T. 14 N., R. 13 W., corner of secs. 16, 17, 20, and 21, T road north	43 35 49.8	85 52 49.2	5,574
T. 14 N., R. 13 W., corner of secs. 15, 16, 21, and 22, crossroads at Lincoln Town Hall	43 35 49.3	85 51 38.1	5,230
T. 14 N., R. 13 W., corner of secs. 14, 15, 22, and 23, T road north	43 35 50.1	85 50 26.9	5,240
T. 14 N., R. 13 W., corner of secs. 13, 14, 23, and 24, T road south	43 35 49.9	85 49 17.4	5,120
T. 14 N., Rs. 12 and 13 W., corner of secs. 13, 18, 19, and 24, north end of road, blazed tree	43 35 50.0	85 48 06.6	5,207
T. 14 N., Rs. 12 and 13 W., quarter corner between secs. 19 and 24, crossroads	43 35 23.7	85 48 06.7	2,660
T. 14 N., R. 12 W., quarter corner, center of sec. 20, crossroads	43 35 25.5	85 46 17.8	8,015
T. 14 N., R. 12 W., quarter corner between secs. 20 and 21, T road south	43 35 25.5	85 45 41.7	2,660

Magnetic declination for north border of quadrangle, 0° 26′ W.; for south border of quadrangle, 0° 56′ W.; for east border of quadrangle, 1° 0′ W.; for west border of quadrangle. 0° 45′ W.; east-west through center of quadrangle, 0° 45′ W.

WATERVILLE QUADRANGLE—Continued.

North along highways near east border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	Feet.
T. 14 and 15 N., R. 14 W., corner of secs. 5, 6, 31, and 32, T. road	45 34 32.1	86 01 11.7	5,280
road			
T. 15 N., R. 14 W., corner of secs. 29, 30, 31, and 32, crossroads	45 39 32.1	86 01 11.7	5,283
T. 15 N., R. 13 W., corner of secs. 19, 20, 29, and 30, T road west	45 40 13.8	86 00 44.5	5,400
T. 15 N., R. 14 W., corner of secs. 17, 18, and 20, T road west	45 41 06.2	86 01 10.4	5,425
T. 15 N., R. 14 W., corner of secs. 7, 8, 17, and 18, crossroads at village	45 41 58.1	86 01 10.7	5,420
T. 16 N., R. 14 W., corner of secs. 5, 6, 7, and 8, T road east	45 42 50.0	86 01 10.8	5,425
T. 16 N., R. 14 W., corner of secs. 6, 31, and 32, cross			
roads	45 43 41.6	86 01 10.8	5,220
Volney, 3 miles north of, T. 16 N., R. 14 W., corner of secs. 29, 30, 31, and 32, 30 feet south by 20 feet east of crossroads at "Free schoolhouse" [on post stamped " Prim. Trav. Sta. No. 23, 1916 Mich."]	45 44 31.1	86 01 09.4	5,220

Magnetic declination for east border of quadrangle, 0° 45′ W.

WHITE CLOUD QUADRANGLE.

West along highways near north border of quadrangle. (By H. S. Sweney in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	Feet.
Bibley, 15 feet south by 15 feet east of crossroads, west of road [on post stamped " Prim. Trav. Sta. No. 22, 1916 Mich."]	43 44 49.2	85 51 37.0	
T. 15 N., R. 15 W., quarter corner between secs. 24 and 25, T road north	43 44 39.0	85 51 37.5	5,275
T. 15 N., R. 15 W., section line between secs. 21 and 22, point 15 feet north of fence corner	43 43 31.4	85 51 09.2	5,082
T. 15 N., R. 14 W., corner of secs. 23, 26, and 36, T road south	43 44 29.0	85 50 38.2	5,275
Pere Marquette River, east end of Indian dam	43 44 36.6	85 47 36.3	6,021
T. 15 N., R. 14 W., corner of secs. 27, 28, 33, and 34, meanders north	43 44 32.3	85 46 06.8	4,852
T. 15 N., R. 14 W., corner of secs. 25, 26, 35, and 36, crossroads	43 44 28.7	85 45 39.2	4,760

East through center of quadrangle.

T. 14 N., R. 11 W., corner of secs. 27, 28, 33, and 34, crossroads	43 34 06.8	85 24 42.9	
T. 14 N., R. 11 W., corner of secs. 26, 27, 34, and 35, crossroads	43 34 07.2	85 23 27.2	5,280
T. 14 N., R. 11 W., corner of secs. 25, 26, 35, and 36, corner stone	43 34 06.4	85 22 12.2	5,280
T. 14 N., R. 11 W., corner of secs. 23, 24, 25, and 26, meanders	43 34 06.3	85 20 57.3	5,280
T. 14 N., Rs. 12 and 11 W., corner of secs. 19, 24, 25, and 30, T road	43 34 06.3	85 19 42.3	5,280
west, north of bridge at Argus	43 34 06.8	85 18 27.3	5,280
T. 14 N., Rs. 12 and 11 W., corner of secs. 13, 18, 19, and 24, T road west	43 34 06.9	85 17 12.3	5,280
T. 14 N., Rs. 12 and 11 W., corner of secs. 7, 12, 13, and 18, crossroads	43 33 36.1	85 16 11.8	5,340
T. 14 N., R. 12 W., corner of secs. 7, 8, 17, and 18, township south	43 33 06.1	85 15 11.9	5,270
Argus, 2 miles north by 2 miles east of, T. 14 N., R. 12 W., corner of secs. 8, 9, 16, and 17, 18 feet north by 18 feet west of crossroads	43 33 06.7	85 14 06.9	5,224
[on post stamped " Prim. Trav. Sta. No. 20, 1916 Mich."]	43 33 06.9	85 12 42.2	5,360
T. 14 N., R. 12 W., corner of secs. 10, 11, 15, and 16, T road north	43 33 49.8	85 12 49.2	5,374
T. 14 N., R. 12 W., corner of secs. 2, 3, 10, and 11, crossroads at Lincoln Town Hall	43 33 49.3	85 01 36.1	5,280
T. 14 N., R. 12 W., corner of secs. 13, 18, 23, and 24, T road north	43 33 50.1	85 10 36.9	5,280
T. 14 N., R. 13 W., corner of secs. 13, 14, 23, and 24, T road south	43 33 49.9	85 09 11.1	5,120
T. 14 N., Rs. 13 and 12 W., corner of secs. 13, 18, 19, and 24, north of road, bluff tree	43 33 50.0	85 08 06.6	5,207
T. 14 N., Rs. 13 and 12 W., quarter corner between secs. 19 and 24, crossroads	43 33 37.7	85 06 36.7	5,300
T. 14 N., R. 13 W., quarter corner, center of sec. 20, crossroads	43 33 36.5	85 05 17.8	5,019
T. 14 N., R. 13 W., quarter corner between secs. 20 and 21, T road south	43 33 36.5	85 03 42.7	5,060

Magnetic declination for north border of quadrangle, 0° 20′ W.; for south border of quadrangle, 0° 35′ W.; for east border of quadrangle, 1° 0′ W.; for west border of quadrangle, 0° 40′ W.; east-west through center of quadrangle, 0° 30′ W.

KANSAS AND OKLAHOMA.

PRIMARY TRAVERSE.

Columbus, Joplin, Parsons, and Wyandotte quadrangles.

CHEROKEE COUNTY.

In the spring of 1916 J. H. Wilson extended control for the above-named quadrangles from primary traverse stations previously located in near-by parts of Kansas and Missouri. (See Missouri list also.) The line was tied to Edwards triangulation station.

Positions are on approximate North American datum.

COLUMBUS QUADRANGLE, KANS.

South along highways near west border of quadrangle, north half. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 32 S., R. 22 E., corner of secs. 21, 22, 27, and 28, crossroads at church	37 14 16.2	94 59 42.2	.....
T. 32 S., R. 22 E., corner of secs. 27, 28, 33, and 34, crossroads	37 13 23.5	94 59 42.7	5,330
Tps. 32 and 33 S., R. 22 E., corner of secs. 3, 4, 33, and 34, crossroads at district 11 schoolhouse	37 12 30.8	94 59 42.6	5,335
T. 33 S., R. 22 E., corner of secs. 3, 4, 9, and 10, crossroads	37 11 37.8	94 59 42.8	5,355
Hallowell, northeast corner of village, T. 33 S., R. 22 E., stone corner of secs. 9, 10, 15, and 16, crossroads at schoolhouse	37 10 45.1	94 59 42.2	5,330
Hallowell, railroad crossing, about 800 feet east of depot	37 10 29.8	94 59 42.3	1,555
T. 33 S., R. 22 E., corner of secs. 15, 16, 21, and 22, crossroads	37 09 52.3	94 59 42.5	3,785
T. 33 S., R. 22 E., corner of secs. 21, 22, 27, and 28, crossroads	37 08 59.0	94 59 42.6	5,395
T. 33 S., R. 22 E., 25 feet south by 25 feet east of corner of secs. 27, 28, 33, and 34, at southeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 19, 1916"	37 08 05.7	94 59 42.5	5,382
Along highways through center of quadrangle.			
T. 33 S., R. 22 E., corner of secs. 26, 27, 34, and 35, crossroads	37 08 05.8	94 58 36.9	.....
T. 33 S., R. 22 E., corner of secs. 25, 26, 35, and 36, crossroads	37 08 05.7	94 57 31.5	5,300
T. 33 S., Rs. 22 and 23 E., corner of secs. 25, 30, 31, and 36, crossroads	37 08 05.5	94 56 25.9	5,315
T. 33 S., R. 23 E., corner of secs. 29, 30, 31, and 32, crossroads	37 08 05.0	94 55 20.6	5,285
T. 33 S., R. 23 E., corner of secs. 28, 29, 32, and 33, crossroads	37 08 04.7	94 54 15.3	5,290
T. 33 S., R. 23 E., 25 feet south by 35 feet east of corner of secs. 27, 28, 33, and 34, at southeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 20, 1916"	37 08 03.8	94 53 09.1	5,360
East along highways through center of quadrangle.			
T. 33 S., R. 23 E., stone corner of secs. 26, 27, 34, and 35, crossroads at Mitchell schoolhouse	37 08 03.8	94 52 04.1	5,268
T. 33 S., R. 23 E., corner of secs. 25, 26, 35, and 36, crossroads	37 08 03.5	94 50 58.7	5,292
T. 33 S., Rs. 23 and 24 E., corner of secs. 25, 30, 31, and 36, crossroads	37 08 02.9	94 49 53.4	5,290
T. 33 S., R. 24 E., corner of secs. 29, 30, 31, and 32, crossroads	37 08 02.7	94 48 48.4	5,260
T. 33 S., R. 24 E., corner of secs. 28, 29, 32, and 33, T road north.	37 08 02.6	94 47 42.8	5,314
T. 33 S., R. 24 E., corner of secs. 27, 28, 33, and 34, T road north.	37 08 02.6	94 46 37.0	5,303
T. 33 S., R. 24 E., corner of secs, 26, 27, 34, and 35, crossroads	37 08 02.5	94 45 31.4	5,310

COLUMBUS QUADRANGLE, KANS.—Continued.

West along St. Louis-San Francisco Ry. (1900 traverse line.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 33 S., R. 24 E., quarter corner between secs. 16 and 17; railroad crossing is 40 feet south	37 10 14.9	94 47 43.3	.....
Columbus, east of, at crossing of Kansas City, Pittsburg & Gulf Ry	37 10 32.0	94 50 14.3	12,351
Columbus, at station	37 10 30.8	94 50 34.6	1,649
Road crossing (see Wilson's traverse above)	37 10 43.8	94 54 15.2	17,903
Sherwin crossing of Missouri Pacific R. R.	37 10 45.1	94 56 53.9	12,796
T. 33 S., R. 22 E., corner of secs. 11, 12, 13, and 14; railroad crossing is 100 feet north	37 10 44.3	94 57 31.4	3,041
Road crossing (see Wilson's traverse)	37 10 29.8	94 59 42.3	2,450

Magnetic declination for north and south borders and along center line of quadrangle, 8.8° E.; for west border of quadrangle, 8.9° E.

South along highways along south half of west border of quadrangle.

Tps. 33 and 34 S., R. 22 E., corner of secs. 3, 4, 33, and 34, crossroads.	37 07 13.1	94 59 42.6	.....
T. 34 S., R. 22 E., corner of secs. 3, 4, 9, and 10, 1 mile east of Faulkner, crossroads	37 06 18.7	94 59 42.6	5,500
T. 34 S., R. 22 E., corner of secs. 9, 10, 15, and 16, crossroads	37 05 24.6	94 59 42.7	5,460
T. 34 S., R. 22 E., corner of secs. 15, 16, 21, and 22, crossroads	37 04 32.2	94 59 42.4	5,295
T. 34 S., R. 22 E., corner of secs. 21, 22, 27, and 28, crossroads	37 03 41.0	94 59 41.8	5,175
Pleasant Valley schoolhouse, T. 34 S., R. 22 E., corner of secs. 27, 28, 33, and 34, crossroads	37 02 48.5	94 59 41.5	5,305
Tps. 34 and 35 S., R. 22 E., corner of secs. 3, 4, 33, and 34, crossroads.	37 01 55.6	94 59 41.5	5,345
Fairview schoolhouse, T. 35 S., R. 22 E., corner of secs. 3, 4, 9, and 10, crossroads	37 01 03.0	94 59 41.5	5,320
T. 35 S., R. 22 E., corner of secs. 9, 10, 15, and 16, T road east and lane west	37 00 10.6	94 59 41.7	5,300

At Edwards triangulation station.

Edwards triangulation station, on a prairie hill locally known as Blue Mound, 0.3 mile north of south line of Kansas, at point 6 miles west of Baxter Springs on land of Mr. Edwards; iron post (Bull. 440, p. 490) North American datum	37 00 13.2	94 49 25.9	.....
Value on Indian Territory datum	37 00 14.6	94 49 23.9	.....
NOTE.—For positions along the Kansas-Oklahoma State line near south border of quadrangle see Wyandotte quadrangle.			

JOPLIN 30′ QUADRANGLE, NORTHEAST QUARTER, KANS.

Near southwest corner of 15′ quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 32 S., R. 24 E., 20 feet south by 30 feet west of corner secs. 13, 14, 23, and 24, at southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 16, 1916"	37 15 05.1	94 44 28.8	.....

Magnetic declination for southwest corner of quadrangle, 8.7° E.

JOPLIN 30′ QUADRANGLE, NORTHWEST QUARTER, KANS.

West along highways near south border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 32 S., R. 24 E., corner of secs. 14, 15, 22, and 23, crossroads	37 15 05.6	94 45 33.8	
T. 32 S., R. 24 E., corner of secs. 15, 16, 21, and 22, crossroads	37 15 05.9	94 46 38.9	5,260
T. 32 S., R. 24 E., corner of secs. 16, 17, 20, and 21, crossroads	37 15 06.4	94 47 44.6	5,310
T. 32 S., R. 24 E., corner of secs. 17, 18, 19, and 20, crossroads	37 15 06.7	94 48 49.7	5,270
Skidmore, 1 mile north of, at road crossing on St. Louis–San Francisco Ry	37 15 07.0	94 49 34.3	3,600
Crowe 10, T. 32 S., Rs. 23 and 24 E., crossroads at district 91 schoolhouse	37 15 07.1	94 49 54.4	1,625
West Skidmore, T. 32 S., R. 23 E., corner of secs. 13, 14, 23, and 24, at crossroads	37 15 07.4	94 50 59.9	5,295
T. 32 S., R. 23 E., corner of secs. 14, 15, 22, and 23, at crossroads	37 15 07.6	94 52 05.3	5,290
T. 32 S., R. 23 E., 20 feet south by 25 feet east of corner of secs. 15, 16, 21, and 22, at southeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 17, 1916"	37 15 07.5	94 53 10.5	5,269
T. 32 S., R. 23 E., corner of secs. 16, 17, 20, and 21, at crossroads at Miriam schoolhouse	37 15 08.1	94 54 16.4	5,330
Road north	37 15 08.6	94 55 18.9	5,050
T. 32 S., Rs. 22 and 23 E., corner of secs. 13, 24, 18, and 19, crossroads	37 15 09.3	94 56 25.3	5,270
T. 32 S., R. 22 E., corner of secs. 13, 14, 23, and 24, crossroads	37 15 08.7	94 57 30.6	5,274
T. 32 S., R. 22 E., corner of secs. 14, 15, 22, and 23, crossroads	37 15 08.4	94 58 35.8	5,275
T. 32 S., R. 22 E., 25 feet south by 18 feet west of corner of secs. 15, 16, 21, and 22, at southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 18, 1916"	37 15 08.0	94 59 41.5	5,307

Magnetic declination for south border of quadrangle, 8.8° E.

JOPLIN DISTRICT QUADRANGLE, KANS.

West along highways near State line and north border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Waco, Mo., 1 mile west of, 25 feet east of Kansas-Missouri State line, 25 feet east by 20 feet south of west corner of fractional sections 10 and 15, T. 29 N., R. 34 W., at southeast corner of T road east; iron post stamped "Prim. Trav. Sta. No. 14, 1916 Mo."	37 14 50.4	94 37 03.8	
T. 32 S., R. 25 E., east corner of fractional sections 24 and 25, at T road west on State line; west corner of secs. 15 and 22, T. 29 N., R. 34 W., is 1,400 feet south	37 14 12.3	94 37 04.3	3,850
T. 32 S., R. 25 E., east corner of fractional sections 25 and 36, T road west on State line	37 13 19.9	94 37 04.4	5,300
Lawton, at crossroads	37 13 20.0	94 38 09.5	5,270
T. 32 S., R. 25 E., corner of secs. 26, 27, 34, and 35, T road south	37 13 20.5	94 38 58.9	3,994
T. 32 S., R. 25 E., corner of secs. 27, 28, 33, and 34, T road south	37 13 20.2	94 40 05.0	5,345
T. 32 S., R. 25 E., corner of secs. 28, 29, 32, and 33, crossroads	37 13 20.0	94 41 11.3	5,360
T. 32 S., R. 25 E., corner of secs. 29, 30, 31, and 32, crossroads	37 13 19.8	94 42 16.8	5,300
T. 32 S., Rs. 24 and 25 E., corner of secs. 25, 36, 30, and 31, crossroads	37 13 19.6	94 43 21.7	5,245
T. 32 S., R. 24 E., corner of secs. 25, 26, 35, and 36, crossroads	37 13 19.9	94 44 27.6	5,330

South along highways near west border of quadrangle.

T. 32 S., R. 24 E., corner of secs. 23, 24, 25, and 26, just east of steel bridge over Shawnee Creek, crossroads	37 14 12.6	94 44 27.9	5,328
Tps. 32 and 33 S., R. 24 E., corner of secs. 1, 2, 35, and 36, crossroads	37 12 26.9	94 44 26.9	5,362
T. 33 S., R. 24 E., corner of secs. 1, 2, 11, and 12, crossroads	37 11 34.2	94 44 26.7	5,327
T. 33 S., R. 24 E., corner of secs. 11, 12, 13 and 14, crossroads	37 10 41.2	94 44 26.5	5,365
T. 33 S., R. 24 E., quarter corner between secs. 13 and 14, railroad crossing	37 10 14.4	94 44 26.5	2,710

JOPLIN DISTRICT QUADRANGLE, KANS.—Continued.

(Hawkins 1900 traverse.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 33 S., R. 24 E., corner of secs. 13, 14, 23, and 24, crossroads at schoolhouse	37 09 48.1	94 44 26.4	2,655
T. 33 S., R. 24 E., corner of secs. 23, 24, 25, and 26, crossroads	37 08 55.3	94 44 25.9	5,335
T. 33 S., R. 24 E., corner of secs. 25, 26, 35, and 36, T road north	37 08 02.4	94 44 25.9	5,344
T. 33 S., R. 24 E., 20 feet north of quarter corner between secs. 26 and 35, on north side of east and west road, in line with T road south; iron post stamped "Prim. Trav. Sta. No. 15, 1916"	37 08 02.8	94 44 58.4	2,637
Tps. 33 and 34 S., R. 24 E., corner of secs. 1, 2, 35, and 36, T road south	37 07 09.4	94 44 25.7	6,008
T. 34 S., R. 24 E., corner of secs. 1, 2, 11, and 12, crossroads	37 06 17.1	94 44 25.9	5,290
T. 34 S., R. 24 E., corner of secs. 11, 12, 13, and 14, crossroads	37 05 24.7	94 44 26.2	5,300
T. 34 S., R. 24 E., corner of secs. 13, 14, 23, and 24, T road east	37 04 32.3	94 44 26.4	5,290
Birch Creek, south end of bridge over	37 04 24.3	94 44 26.8	814
T. 34 S., R. 24 E., stone corner of secs. 23, 24, 25, and 26, T road west	37 03 39.5	94 44 26.2	4,526
T. 34 S., R. 24 E., corner of secs. 25, 26, 35, and 36, crossroads	37 02 45.6	94 44 25.7	5,445
Baxter, Tps. 34 and 35 S., R. 24 E., corner of secs. 35, 36, 1, and 2, T road north	37 01 52.1	94 44 25.2	5,415
Baxter Springs, intersection of Military and River streets	37 01 25.2	94 44 06.6	3,107
Bull. 440, p. 490, value	37 01 26.6	94 44 04.5	.....

Magnetic declination for north border of quadrangle, 8.4° E.; for west border of quadrangle, 8.7° E.

Northwest along St. Louis-San Francisco Ry. (By G. T. Hawkins in 1900.)

Crossing of Missouri-Kansas State line	37 09 58.4	94 37 04.4	.....
T. 33 S., R. 25 E., quarter corner between secs. 17 and 18, crossing	37 10 14.2	94 42 15.0	25,194
Crestline, at station	37 10 14.2	94 42 18.9	310
T. 33 S., R. 24 E., quarter corner between secs. 13 and 14, crossing	37 10 14.4	94 44 26.5	10,320

PARSONS QUADRANGLE, KANS.

Along St. Louis-San Francisco Ry. (a spur line of 1900 to Oswego Astronomical Station.) (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Oswego, 3 miles east of, 70 feet south of road crossing at section corner, 3,560 feet east of middle of Neosho River	37 09 52.7	95 02 59.2	.....
Oswego, courthouse spire	37 09 55.3	95 06 26.9	16,813
Astronomical value	37 09 58.9	95 06 24.1	.....

WYANDOTTE QUADRANGLE, KANS.-OKLA.

East along highways near State line (north border of quadrangle). (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 35 S., R. 22 E., 20 feet south of south corner of secs. 15 and 16 and Kansas Oklahoma State line, on south side of road, opposite T road north; iron post stamped "Prim. Trav. Sta. No. 21, 1916"	36 59 58.1	94 59 41.7	.....
NOTE.—T road south at north corner of secs. 13 and 14, T. 29 N., R. 21 E., is 15 feet north by 630 feet east.			
T. 35 S., R. 22 E., south corner of secs. 14 and 15, at T road north	36 59 58.1	94 58 36.3	5,300
NOTE.—T lane south at north corner of secs. 13 and 18, T, 29 N., Rs. 21 and 22 E., is 610 feet east.			
T. 35 S., R. 22 E., south corner of secs. 13 and 14, at T road north.	36 59 57.9	94 57 30.6	5,339
NOTE.—T lane south at north corner of secs. 17 and 18, T, 29 N., R 22 E., is 470 feet east of above			
T 35 S., Rs. 22 and 23 E., south corner of secs. 13 and 18, at T road north	36 59 57.3	94 56 25.3	5,300
T. 35 S., R. 23 E., south corner of secs. 17 and 18, at T road north	36 59 57.0	94 55 20.0	5,295
NOTE.—From above corner eastward the State line is in center of road.			
T. 35 S., R. 23 E., south corner of secs. 16 and 17, T road north	36 59 56.5	94 54 14.6	5,300
NOTE.—North corner of secs. 14 and 15, T. 29 N., R. 22 E., is 410 feet east of above.			
T. 35 S., R. 23 E., south corner of secs. 15 and 16, T road north	36 59 56.0	94 53 09.4	5,290
NOTE.—North corner of secs. 13 and 14, T. 29 N., R 22 E., at T road south, is 420 feet east.			
T. 35 S., R. 23 E., south corner of secs. 14 and 15, T road north	36 59 56.2	94 52 03.5	5,350
NOTE.—North corner of secs. 13 and 18, T. 29 N., Rs. 22 and 23 E., at road south is 300 feet east.			
T. 35 S., R. 23 E., south corner of secs. 13 and 14, T road north	36 59 56.0	94 50 58.1	5,299
T. 35 S., Rs. 23 and 24 E., south corner of secs. 23 and 18, T road north	36 59 55.8	94 49 52.5	5,320
NOTE.—North corner of secs. 16 and 17, T. 29 N., R. 24 E., at T road south is 160 feet east.			

Along highways near State line (north border of quadrangle) by traverse of 1906, taken from Bulletin 440, page 490, corrected.

NOTE.—For Edwards triangulation station, see Columbus, Kans., quadrangle.			
T. 33 S., R. 24 E., southeast corner of sec. 18, T road north	36 59 55.6	94 48 47.2	.....
T. 33 S., R. 24 E., southeast corner of sec. 17, T road north	36 59 55.8	94 47 41.5	5,330
T 33 S., R. 24 E., southeast corner of sec. 16, T road north	36 59 55.4	94 46 36.1	5,305
T. 33 S., R. 24 E., southeast corner of sec. 15, T road north	36 59 55.0	94 45 30.5	5,322
Baxter Springs, 2 miles south of, at T road north on Kansas-Oklahoma State line, 2 feet north of east and west wire fence, south of line road; iron post stamped "Prim. Trav. Sta. No. 11, 1906"	36 59 55.2	94 44 09.0	6,611
Kansas, southeast corner	36 59 55.6	94 37 03.2	34,542

Magnetic declination for north border, 1916, 8.7° E.

MISSOURI.

PRIMARY TRAVERSE.

Carthage, Greenfield, Halltown, Joplin, Sarcoxie, Springfield, and Stotts City quadrangles.

DADE, JASPER, AND LAWRENCE COUNTIES.

In the spring of 1916 J. H. Wilson extended control for the above-named quadrangles from primary traverse stations previously located in this vicinity. The positions are on approximate North American datum.

For other positions in Missouri see U. S. Geological Survey Bulletins 122, 181, 201, 216, 245, 310, 440, 496, 551, 644, Nineteenth Annual Report, Part I; U. S. Coast and Geodetic Survey Special Publication No.

30, Missouri River Commission Reports for 1891 and 1893, Mississippi River Commission Reports for 1883, 1888, and 1891, also Appendix 22, House Document 50, Sixty-first Congress.

CARTHAGE 30′ QUADRANGLE.

West along highways through center of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 29 N., R. 28 W., line between secs. 5 and 6, T road east	37 15 42.1	94 01 03.1	.....
T. 29 N., R. 28 W., corner of secs, 5, 6, 7, and 8, T road west	37 15 03.0	94 01 04.0	3,961
T. 29 N., R. 29 W., east corner of secs. 1 and 12, T road west	37 15 04.5	94 02 06.0	5,018
NOTE.—70 feet south of the above corner is T. 29 N., R. 28 W., west corner of secs. 6 and 7, at T road east.			
T. 29 N., R. 29 W., corner of secs. 1, 2, 11, and 12, crossroads, on Lawrence-Jasper county line	37 15 07.2	94 03 10.5	5,219
T. 29 N., R. 29 W., corner of secs. 2, 3, 10, and 11, crossroads	37 15 08.6	94 04 16.6	5,345
T. 29 N., R. 29 W., corner of secs. 3, 4, 9, and 10, crossroads	37 15 10.2	94 05 21.6	5,256
T. 29 N., R. 29 W., stone corner of secs. 4, 5, 8, and 9, crossroads	37 15 11.8	94 06 27.6	5,334
Maple Grove, at southwest corner of crossroads, 23 feet south by 30 feet west of corner of secs. 5, 6, 7, and 8, T. 29 N., R. 29 W.; iron post stamped "Prim. Trav. Sta. No. 8, 1,100, 1916 Mo."	37 15 12.9	94 07 32.1	5,222
T. 29 N., R. 29 W., west corner of secs. 6 and 7, T road east	37 15 14.6	94 08 34.7	5,060
NOTE.—140 feet north of above corner is T. 29 N., R. 30 W., east corner of secs. 1 and 12, T road west.			
T. 29 N., R. 30 W., corner of secs. 1, 2, 11, and 12, crossroads	37 15 17.0	94 09 40.5	5,328
T. 29 N., R. 30 W., corner of secs. 2, 3, 10, and 11, at Deer Creek schoolhouse, crossroads	37 15 18.3	94 10 46.1	5,300
T 29 N., R. 30 W., corner of secs. 3, 4, 9, and 10, crossroads	37 15 19.6	94 11 51.3	5,270
T. 29 N., R. 30 W., corner of secs. 4, 5, 8, and 9, T road east	37 15 21.3	94 12 56.3	5,260

Magnetic declination for south border of quadrangle, 7.7° E.

GREENFIELD QUADRANGLE, NORTHEAST QUARTER.

Northwest along St. Louis-San Francisco Ry. (1900 traverse line). (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Bois d'Arc station	37 15 27.3	93 30 24.0	.....
T. 29 N., R. 24 W., corner of secs. 1, 1, 2, 2	37 15 30.5	93 30 44.5	.....
T. 30 N., R. 24 W., south corner of secs. 34 and 35	37 16 49.9	93 33 08.1	.....
Ash Grove station	37 18 59.0	93 35 12.3	.....

West along highway in southeast quarter of quadrangle.

T. 29 N., R. 24 W., corner of secs. 2, 2, 3, 3, center of east and west road at north and south fence line	37 15 30.5	93 31 50.1	.....
NOTE.—The sections of the northern tier are more than 2 miles long north and south. This line of traverse seems to run through them about 1 mile from the south border.			
T. 29 N., R. 24 W., corner of secs. 3, 3, 4, 4, T road south at Fairview schoolhouse	37 15 30.8	93 32 55.7	5,300
T. 29 N., R. 24 W., corner of secs. 4, 4, 5, 5, crossroads	37 15 31.1	93 34 01.4	5,315
T. 29 N., R. 24 W., corner of secs. 5, 5, 6, 6, T road south at Stony Point schoolhouse and church	37 15 30.9	93 35 07.6	5,345
Junction point not described	37 15 30.9	93 35 23.9	1,320
Tps. 29 and 30 N., Rs. 24 and 25 W., closing corner at T road south, northeast corner of Lawrence County, 21 feet northwest of iron pipe fence post with a concrete base	37 16 53.8	93 35 17.1	9,417
T. 30 N., R. 24 W., south corner of secs. 32 and 33, T road west, 180 feet east of T road south	37 16 52.4	93 35 20.0	4,610
T. 30 N., R. 24 W., corner of secs. 28, 29, 32, and 33, at crossroads	37 17 44.8	93 35 18.3	5,294
T. 30 N., R. 24 W., corner of secs. 20, 21, 28, and 29, T road west, 25 feet south of iron bridge over creek	37 18 37.1	93 35 16.6	5,300

GREENFIELD QUADRANGLE, NORTHEAST QUARTER—Continued.

West along highway near west half of south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Lawrenceburg, 0.5 mile north of, stone corner at T road west, line between secs. 3 and 4, T. 29 N., R. 25 W.	37 15 07.7	93 39 35.5	.....
NOTE.—North tier of sections is about 2.5 miles long.			
T. 29 N., R. 25 W., stone corner at line between secs. 4 and 5, at T road north	37 15 08.4	93 40 40.7	5,272
Crossroads	37 15 08.8	93 41 17.6	2,985
T. 29 N., Rs. 25 and 26 W., T road east, 0.5 mile north of south corner of secs. 1 and 6	37 15 10.2	93 42 39.7	6,636
Turnback Creek, just east of ford over, at road forks, in center of triangle	37 15 14.1	93 43 41.6	5,023
T road east	37 15 01.9	93 44 18.3	3,219

Magnetic declination for south border of quadrangle, 7.7° E.

GREENFIELD QUADRANGLE, NORTHWEST QUARTER.

West along highways near south border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Stinson, 1.2 miles north of center of triangle at road crossing	37 15 52.8	93 45 06.4	.....
Ford of creek	37 16 19.5	93 45 26.0	3,139
T road east at Virgil Ruark's residence	37 16 20.4	93 46 12.1	3,725
T. 29 N., R. 26 W., line between secs. 4 and 5, T lane north	37 16 08.2	93 47 02.0	4,217
Road north at church and schoolhouse	37 16 08.3	93 47 31.4	2,380
Mail box No. 12 at road forks	37 16 09.6	93 48 01.9	2,470
Mail boxes on wheel at road forks	37 15 49.6	93 48 39.6	3,661
Road fork west	37 16 08.2	93 49 11.9	3,214
Olinger, 0.5 mile south of, at crossroads at schoolhouse, line between secs. 1 and 2, T. 29 N., R. 27 W.	37 16 10.1	93 50 12.6	4,917
T. 29 N., R. 27 W., line between secs. 2 and 3, road south and east and lane north, 1,280 feet north of T road west	37 16 11.4	93 51 18.7	.....
T. 29 N., R. 27 W., line between secs. 3 and 4, center of east and west road at fence north	37 15 59.3	93 52 23.2	5,358
Crossroads	37 15 59.6	93 52 56.2	2,665
T. 29 N., R. 27 W., line between secs. 4 and 5, at north and south fence line, center of east and west road	37 16 00.1	93 53 28.6	2,626
Round Grove, at northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 6, 1268, 1916 Mo."	37 16 00.6	93 54 18.4	4,024
T. 29 N., R. 27 W., line between secs. 5 and 6, T lane north	37 16 00.6	93 54 35.5	1,380
T. 29 N., Rs. 27 and 28 W., line between secs. 1 and 6, crossroads	37 16 01.2	93 55 37.3	4,995
T. 29 N., R. 28 W., line between secs. 1 and 2, crossroads	37 16 02.4	93 56 44.3	5,340
T. 29 N., R. 28 W., line between secs. 2 and 3, T road east at schoolhouse	37 16 04.0	93 57 48.5	5,276
T. 29 N., R. 28 W., line between secs. 3 and 4	37 15 39.5	93 58 53.6	5,826
Salem Church, T. 29 N., R. 28 W., 20 feet west of line between secs. 4 and 5, at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 7, 1205, 1916 Mo."	37 15 41.1	93 59 58.0	5,209

Magnetic declination for south border of quadrangle, 7.3° E.

HALLTOWN QUADRANGLE.

South along St. Louis-San Francisco Ry. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 27 N., R. 24 W., corner of secs. 4, 5, 8, and 9	37 04 06.9	93 33 14.9	.....
Billings station	37 04 00.2	93 33 16.4	.....
Logan, section corner just east of	37 01 03.8	93 36 34.5	.....
Logan station (Bull. 496 point corrected)	37 00 48.6	93 36 57.5	.....

HALLTOWN QUADRANGLE—Continued.

Along highways near southeast border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Marionville, 1.25 miles east of, 0.25 mile west of Lawrence-Christian county line at southeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 12, 1909 Mo." (Bull. 496 point corrected)	37 00 11.3	93 36 50.9	.....
T. 27 N., Rs. 24 and 25 W., quarter corner between secs. 31 and 36, Lawrence-Christian county line	37 00 11.3	93 36 35.0	1,294
T. 27 N., R 24 W., quarter corner between secs. 31 and 32, crossroads	37 00 10.8	93 35 31.0	5,190
T. 27 N., R. 24 W., quarter corner between secs. 32 and 33, T road west	37 00 10.0	93 34 25.1	5,341
T. 27 N., R. 24 W., corner of secs. 28, 29, 32, and 33, T road east	37 00 36.2	93 34 24.7	2,650
T. 27 N., R. 24 W., corner of secs. 27, 28, 33, and 34, T road north	37 00 35.3	93 33 19.2	5,316
T. 27 N., R. 24 W., corner of secs. 26, 27, 34, and 35	37 00 34.4	93 32 12.7	5,391
T. 27 N., R. 24 W., corner of secs. 25, 26, 35, and 36	37 00 33.0	93 31 07.3	5,310
Railroad crossing	37 00 32.7	93 30 48.2	1,545
T. 27 N., R. 24 W., 20 feet south by 15 feet west of east corner of secs. 25 and 36, 55 feet south by 15 feet west of west corner of secs. 30 and 31, T. 27 N., R. 23 W., at southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 1, 1916 Mo."	37 00 31.6	93 30 02.0	3,751
T. 27 N., R. 24 W., east corner of secs. 24 and 25, T road west; 15 feet north of above corner is west corner of secs. 19 and 30, T. 27 N., R. 23 W	37 01 24.8	93 30 00.5	5,380

Southwest along highways in north center of quadrangle.

T. 29 N., R. 25 W., east corner of secs. 1 and 12, at bend in road, on Lawrence-Greene county line, 0.25 mile east of crossroads	37 14 39.8	93 36 19.2	.....
T. 29 N., R. 25 W., corner of secs. 1, 2, 11, and 12, at crossroads; iron post stamped "Prim. Trav. Sta. No. 4, 1916 Mo."	37 14 39.0	93 37 24.7	5,295
T. 29 N., R. 25 W., corner of secs. 11, 12, 13, and 14, crossroads	37 13 46.9	93 37 25.9	5,276
T. 29 N., R. 25 W., corner of secs. 13, 14, 23, and 24, T road east	37 12 54.7	93 37 27.4	5,285
T. 29 N., R. 25 W., corner of secs. 23, 24, 25, and 26, center of north and south road at east and west fence line	37 12 02.5	93 37 28.6	5,280
Halltown, crossroads at east edge of, quarter corner between secs. 25 and 26, T. 29 N., R. 25 W	37 11 36.5	93 37 29.25	2,631
T. 29 N., R. 25 W., quarter-corner stone in center of sec. 26, T road south	37 11 37.2	93 38 02.1	2,656
T road west	37 10 56.9	93 38 19.4	4,313
T road south (180 feet jog at township line between Tps. 28 and 29 N.)	37 10 19.1	93 38 22.3	3,826
T. 28 N., R. 25 W., quarter-corner stone between secs. 2 and 11, at Roper schoolhouse crossroads	37 09 23.8	93 38 06.7	5,744
T. 28 N., R. 25 W., stone quarter-corner between secs. 11 and 14, crossroads	37 08 31.5	93 38 07.3	5,289
Sycamore schoolhouse, district 6, on north side of east and west road, opposite front door; iron post stamped "Prim. Trav. Sta. No. 1, 1909 Mo." (Bull. 496 point corrected)	37 07 39.5	93 37 51.0	5,424

West along highways near north border of quadrangle.

T. 29 N., R. 25 W., corner of secs. 2, 3, 10, and 11, just west of Pilgrim's Rest Church, center of east and west road at fence line	37 14 40.4	93 38 30.2	.....
Lawrenceburg, corner of secs. 3, 4, 9, and 10, T. 29 N., R. 25 W., at T road east	37 14 41.6	93 39 36.3	5,346

Near northwest corner of quadrangle.

T. 29 N., R. 26 W., corner of secs. 2, 3, 10, and 11, T lane south	37 14 47.3	93 44 51.5	.....

Along highways near west border.

T. 28 N., R. 26 W., north corner of secs. 2 and 3, at bend in road; 35 feet east of above corner is T. 29 N., R. 26 W., south corner of secs. 34 and 35	37 10 25.4	93 44 58.7	.....
T. 28 N., R. 26 W., corner of secs. 2, 3, 10, and 11, bend in road	37 09 33.4	93 44 59.8	5,257

Magnetic declination (1916) for southeast corner of quadrangle, 7.2° E.; for east and west borders of quadrangle, 7.5° E.; for north border of quadrangle, 7.7° E.; for north center of quadrangle, 7.8° E.

JOPLIN DISTRICT QUADRANGLE.

South along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 29 N., R. 31 W., 25 feet north by 25 feet west of east corner of secs. 12 and 13, and 100 feet north by 25 feet west of west corner of secs. 7 and 18, T. 29 N., R. 30 W., at northwest corner of cross-roads; iron post stamped "Prim. Trav. Sta. No. 9, 1916, Elev. 1,006 feet"	37 14 33.2	94 15 10.2	.....
T. 29 N., R. 31 W., east corner of secs. 18 and 19, T road west	37 13 40.4	94 15 11.6	5,339
NOTE.—75 feet south of above corner is west corner stone of secs. 13 and 24, T. 29 N., R. 30 W., T road east.			
T. 29 N., Rs. 30 and 31 W., corner of secs. 19, 30, 24, and 25, cross-roads	37 12 47.5	94 15 13.2	5,351
T. 29 N., Rs. 30 and 31 W., corner of secs. 30, 31, 25, and 36, 50 feet west of T road north	37 11 54.9	94 15 14.8	5,322
Maxville, road forks	37 11 55.0	94 16 04.1	3,983
Tps. 28 and 29 N., R. 31 W., at town line, center of road	37 11 03.2	94 16 05.8	5,240
Spring River, east end of bridge	37 10 49.7	94 16 02.7	1,382
T road east	37 10 09.6	94 16 07.4	4,076
T. 29 N., R. 30 W., west corner of secs. 6 and 7, T road south	37 10 10.7	94 15 19.0	3,924
T. 28 N., R. 31 W., east corner of secs. 12 and 13, in line with road west	37 09 18.4	94 15 20.7	5,292
NOTE.—60 feet south of above corner is T. 28 N., R. 30 W., west corner of secs. 7 and 18, in line with road east, Knight station signpost is 4,690 feet south by 1,771 feet east of above station.			
T. 29 N., Rs. 30 and 31 W., corner of secs. 19, 30, 24, and 25, cross-roads at Pleasant Grove schoolhouse	37 07 33.4	94 15 23.7	.....
NOTE.—5,299 feet north by 124 feet east of above is corner of secs. 18, 19, 13, and 24, T. 29 N., Rs. 30 and 31 W., at crossroads.			
T. 29 N., Rs. 30 and 31 W., corner of secs. 30, 31, 25, and 36, T road west	37 06 41.2	94 15 25.4	5,274
Tps. 27 and 28 N., Rs. 30 and 31 W., 30 feet south by 30 feet west of stone corner, at southwest corner of crossroads at church; iron post stamped "Prim. Trav. Sta. No. 10, 1916 Mo." Elev. 1,074 feet	37 05 48.6	94 15 27.4	5,329
T. 27 N., R. 31 W., east corner stone of secs. 1 and 12	37 04 56.4	94 15 28.8	5,281
NOTE.—50 feet south of above corner is T. 27 N., R. 30 W., west corner of secs. 6 and 7, T road east.			
T. 27 N., R. 31 W., east corner of secs. 12 and 13	37 04 03.9	94 15 30.5	5,316
NOTE.—50 feet south of above corner is T. 27 N., R. 30 W., west corner of secs. 7 and 18, T road east.			
T. 27 N., Rs. 30 and 31 W., east corner of secs. 13 and 24, 40 feet north of west corner of secs. 18 and 19, crossroads on Jasper-Newton county line	37 03 11.7	94 15 32.2	5,281
T. 27 N., Rs. 30 and 31 W., corner of secs. 30, 31, 25, and 36, cross-roads	37 01 26.4	94 15 35.6	10,654
Tps. 26 and 27 N., Rs. 30 and 31 W., 45 feet south by 25 feet west of corner, at crossroads, close to hedge fence; iron post stamped "Prim. Trav. Sta. No. 3, 1914 Mo."	37 00 33.9	94 15 37.8	5,310

From Knights station west along St. Louis-San Francisco Ry. to State line (1900 traverse line).

T. 28 N., R. 31 W., corner of secs. 11, 12, 13, and 14, 460 feet north of north and south road crossing and 500 feet east of east and west road crossing	37 09 17.3	94 16 25.4	.....
Carthage, at station, 150 feet northwest of Main Street crossing	37 11 03.0	94 18 35.4	14,999
T. 28 N., R. 31 W., quarter corner between secs. 16 and 17, 105 feet west of road crossing	37 10 36.1	94 20 42.6	10,651
North and south road crossing, elevation 998 feet	37 10 41.0	94 21 53.7	5,765
Macy, at station signboard	37 11 08.5	94 23 48.2	9,665
Mansur, at station	37 11 37.4	94 25 07.6	7,058
Boysur, at north and south road crossing 1,390 feet east of cross-roads	37 11 43.0	94 26 45.3	7,919
Joplin Junction, headblock	37 11 40.5	94 27 44.9	4,827
T. 29 N., R. 33 W., corner of secs. 25, 26, 35, and 36, 850 feet north of north and south road crossing	37 11 59.8	94 29 25.3	8,351
T. 28 N., R. 33 W., north corner of secs. 4 and 5, 550 feet north of north and south road crossing	37 11 13.9	94 32 41.1	16,508
Missouri Pacific R. R. crossing on St. Louis-San Francisco Ry.	37 11 05.1	94 32 50.5	1,167
Carl Junction, crossing of railroad	37 10 43.3	94 33 51.7	5,411
Smithfield, at station	37 10 07.4	94 36 10.5	11,803
Missouri-Kansas State line crossing on St. Louis-San Francisco Ry.	37 09 58.4	94 37 04.4	4,449

Magnetic declination for north border of quadrangle, 8.4° E.; for east border of quadrangle, 8.0° E.; for center line of quadrangle, 8.8° E.

JOPLIN DISTRICT QUADRANGLE—Continued.

West along highways near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 29 N., R. 31 W., corner of secs. 11, 12, 13, and 14, crossroads	37 14 31.4	94 16 15.9	
T. 29 N., R. 31 W., corner of secs. 10, 11, 14, and 15, crossroads	37 14 30.9	94 17 20.8	5,247
T. 29 N., R. 31 W., corner of secs. 9, 10, 15, and 16, crossroads	37 14 31.5	94 18 25.2	5,205
T. 29 N., R. 31 W., corner of secs. 8, 9, 16, and 17, crossroads	37 14 31.6	94 19 30.8	5,310
T. 29 N., R. 31 W., corner of secs. 7, 8, 17, and 18, crossroads	37 14 31.7	94 20 36.1	5,275
T. 29 N., R. 31 W., west corner of secs. 7 and 18; 20 feet south is east corner of secs. 12 and 13, T. 29 N., R. 32 W	37 14 33.0	94 21 46.7	5,711
T. 29 N., R. 32 W., 25 feet east by 10 feet north of corner of secs. 11, 12, 13, and 14, on east side of road at T road west; iron post stamped "Prim. Trav. Sta. No. 11, 1916 Mo."	37 14 32.0	94 22 51.4	5,233
T. 29 N., R. 32 W., corner of secs. 10, 11, 14, and 15, T road east	37 14 31.8	94 23 57.4	5,337
Alba, cross streets, just east of end of electric line, on line between secs. 15 and 16, T. 29 N., R. 32 W	37 14 19.5	94 25 02.7	5,424
Purcell, south edge of, T road north, on line between secs. 16 and 17, T. 29 N., R. 32 W., at southeast corner of cemetery	37 14 20.3	94 26 07.7	5,256
Spring River, east end of bridge over	37 13 59.2	94 27 00.9	4,796
T. 29 N., R. 32 W., on line between secs. 17 and 18, road forks	37 13 55.3	94 27 14.1	1,139
T road west	37 14 35.3	94 28 01.7	5,591
T. 29 N., R. 33 W., corner of secs. 11, 12, 13, and 14, crossroads at schoolhouse	37 14 36.9	94 29 20.8	6,397
T. 29 N., R. 33 W., 25 feet east by 15 feet north of corner of secs. 10, 11, 14, and 15, at northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 12, 1916 Mo."	37 14 38.6	94 30 25.3	5,215
T. 29 N., R. 33 W., corner of secs. 9, 10, 15, and 16, crossroads	37 14 40.6	94 31 31.0	5,320
T. 29 N., R. 33 W., corner of secs. 8, 9, 16, and 17, crossroads	37 14 42.6	94 32 37.0	5,340
T. 29 N., R. 33 W., corner of secs. 7, 8, 17, and 18, T road south	37 14 44.5	94 33 42.0	5,254
T. 29 N., R. 33 W., west corner of secs. 7 and 18, T road east; east corner of secs. 12 and 13, T. 29 N., R. 34 W., is 195 feet north, at T road west	37 14 45.2	94 34 38.7	4,586
Waco, corner of secs. 11, 12, 13, and 14, T. 29 N., R. 34 W., crossroads	37 14 48.8	94 35 43.7	5,269
T. 29 N., R. 34 W., corner of secs. 10, 11, 14, and 15, at fence south	37 14 50.3	94 36 49.2	5,295
Waco, 1 mile west of, 25 feet east of Kansas-Missouri boundary line, 25 feet east by 20 feet south of west corner of fractional secs. 10 and 15, T. 29 N., R. 34 W., at road east; iron post stamped "Prim. Trav. Sta. No. 14, 1916 Mo."	37 14 50.4	94 37 03.8	1,184

Along highways south through center of quadrangle.

T. 29 N., R. 33 W., corner of secs. 14, 15, 22, and 23, crossroads	37 13 46.5	94 30 27.1	
T. 29 N., R. 33 W., corner of secs. 22, 23, 26, and 27, crossroads	37 12 54.3	94 30 28.5	5,281
T. 29 N., R. 33 W., corner of secs. 26, 27, 34, and 35, crossroads	37 12 02.2	94 30 30.1	5,270
T. 29 N., R. 33 W., south corner of secs. 34 and 35, T road north; north corner of secs. 2 and 3, T. 28 N., R. 33 W., at T road south, is 75 feet east	37 11 10.2	94 30 31.7	5,265
T. 28 N., R. 33 W., corner of secs. 2, 3, 10, and 11, center of north and south road at fence line	37 10 18.5	94 30 33.3	5,232
Center Creek, north end of bridge over	37 10 03.2	94 30 44.6	1,799
T. 28 N., R. 33 W., corner of secs. 10, 11, 14, and 15, road east	37 09 26.6	94 30 35.3	3,778
T. 28 N., R. 33 W., corner of secs. 14, 15, 22, and 23, crossroads	37 08 34.4	94 30 37.6	5,280
Joplin, 2 miles north of, on Main Street road, at southeast corner of crossroads, 30 feet south by 20 feet east of corner of secs. 22, 23, 26, and 27; iron post stamped "Prim. Trav. Sta. No. 13, 1916 Mo."	37 07 42.0	94 30 39.8	5,310
T. 28 N., R. 33 W., corner of secs. 26, 27, 34, and 35, T road west	37 06 50.3	94 30 42.4	5,234
Joplin, intersection of Broadway and Main Street	37 05 27.0	94 30 46.6	8,435
Joplin, Main Street crossing on Missouri Pacific R. R. near station	37 04 49.2	94 30 48.4	3,825
Joplin, intersection of 20th and Main streets	37 04 11.0	94 30 49.8	3,860
T. 27 N., R. 33 W., corner of secs. 14, 15, 22, and 23, on Jasper-Newton county line, crossroads	37 03 19.0	94 30 50.6	5,268
T. 27 N., R. 33 W., corner of secs. 22, 23, 26, and 27, T road west	37 02 27.1	94 30 52.8	5,248
Shoal Creek, north end of bridge over (determined by McNair in 1914)	37 01 15.4	94 30 44.2	7,290

SARCOXIE QUADRANGLE.

South along highways near north half of east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 29 N., R. 28 W., corner of secs. 8, 9, 16, and 17, T road east, 0.5 mile east by 0.25 mile north of Red Oak	37 14 09.6	94 00 00.2	.....
T. 29 N., R. 28 W., stone corner of secs. 16, 17, 20, and 21, at fence line west	37 13 17.2	94 00 01.3	5,296
T. 29 N., R. 28 W., corner of secs. 20, 21, 28, and 29, T road north	37 12 25.0	94 00 02.4	5,281
T. 29 N., R. 28 W., stone corner at center of crossroads, 0.25 mile west of corner of secs. 28, 29, 32, and 33	37 11 33.1	94 00 19.8	5,441
Tps. 28 and 29 N., R. 28 W., 0.25 mile west of corner of secs. 4, 5, 32, and 33, at crossroads	37 10 40.9	94 00 20.8	5,286
T. 28 N., R. 28 W., quarter corner between secs. 5 and 8, T road south, just north of schoolhouse	37 09 47.6	94 00 38.0	5,568
Road east, 25 feet northwest of red gate	37 08 48.2	94 00 39.3	6,008
T. 28 N., R. 28 W., 30 feet south of corner of secs. 17, 18, 19, and 20, at T road south	37 08 03.9	94 01 13.0	5,249
Bull. 496, p. 47, value	37 08 07.1	94 01 14.0	.....
Near northwest corner of quadrangle.			
T. 29 N., R. 30 W., stone corner of secs. 7, 8, 17, and 18, crossroads at schoolhouse	37 14 30.5	94 14 03.4	.....
From Reeds station along St. Louis-San Francisco Ry. to Knights. (1900 traverse line.)			
Reeds, at station (Bull. 496, corrected to approximate North American datum)	37 07 02.9	94 10 03.5	.....
T. 28 N., R. 30 W., corner of secs. 17, 18, 19, and 20, 30 feet south of north and south road crossing	37 08 23.9	94 14 14.0	21,874
Knights, at station (tied by 1916 traverse); north and south road crossing is 63 feet north by 308 feet west	37 08 32.1	94 14 58.9	3,726

Magnetic declination for north half of east border of quadrangle, 7.6° E.; for west border of quadrangle, 8.0° E.; for north border of quadrangle, 7.7° E.

From Wentworth station northwest along St. Louis-San Francisco Ry. to Reeds. (From Bull. 181, page 170, corrected; 1900 traverse line.)

Talmage station	37 00 54.4	94 05 34.9	.....
Talmage, section corner at	37 01 12.0	94 05 45.0	1,955
T. 27 N., R. 29 W., quarter corner between secs. 20 and 21	37 03 32.0	94 06 47.2	9,525
Sarcoxie station	37 03 59.5	94 07 00.0	8,904
T. 28 N., R. 30 W., east corner between secs. 25 and 36	37 06 31.0	94 08 50.4	17,736

SPRINGFIELD QUADRANGLE.

North along highways near west border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 27 N., Rs. 23 and 24 W., corner of secs. 18, 19, 13, and 24, crossroads	37 02 17.8	93 29 59.5	.....
T. 27 N., R. 24 W., east corner of secs. 12 and 13, fence west; 20 feet north of above corner is T. 27 N., R. 23 W., west corner of secs. 7 and 18, fence east	37 03 11.0	93 29 58.1	5,376
T. 27 N., R. 23 W., west corner of secs. 6 and 7; 40 feet south is T. 27 N., R. 24 W., east corner of secs. 1 and 12	37 04 03.8	93 29 56.7	5,340
T. 27 N., R. 23 W., north quarter corner of sec. 6, fence east; 65 feet west is T. 28 N., R. 23 W., south quarter corner of sec. 31, fence west	37 04 56.0	93 29 24.0	5,911
T. 28 N., R. 23 W., quarter-corner stone between secs. 30 and 31, 25 feet north of T road, on south Christian-Greene county line	37 05 48.6	93 29 22.9	5,324
T. 28 N., R. 23 W., corner of secs. 29, 30, 31, and 32, crossroads, 1.5 miles south of Republic, on Christian-Greene county line	37 05 48.0	93 28 50.4	2,636
T. 28 N., R. 23 W., corner of secs. 19, 20, 29, and 30, crossroads	37 06 40.5	93 28 48.9	5,309
Republic, at southwest corner of crossroads, 175 feet south of railroad crossing, just east of station; iron post stamped "Prim. Trav. Sta. No. 2, 1916 Mo."	37 07 06.7	93 28 48.4	2,646
Republic, at railroad station	37 07 08.0	93 28 49.4	155
Republic, quarter corner between secs. 19 and 20, T. 28 N., R. 23 W.	37 07 06.7	93 28 48.7	143
Republic, cross streets at corner of secs. 17, 18, 19, and 20, T. 28 N., R. 23 W	37 07 33.3	93 28 47.1	2,690
T. 28 N., R. 23 W., corner of secs. 7, 8, 17, and 18, T road west	37 08 25.6	93 28 45.2	5,300
T. 28 N., R. 23 W., corner of secs. 5, 6, 7, and 8, crossroads	37 09 18.2	93 28 43.6	5,320
T. 29 N., R. 23 W., south corner stone of secs. 31 and 32, T road west; 30 feet east of above corner is T. 28 N., R. 23 W., north corner of secs. 5 and 6	37 10 13.3	93 28 42.6	5,576
T. 29 N., R. 23 W., corner of secs. 29, 30, 31, and 32, T road west, 780 feet south of Jonas schoolhouse	37 11 05.7	93 28 40.7	5,300
T. 29 N., R. 23 W., stone corner of secs. 19, 20, 29, and 30, east and west fence line	37 11 58.2	93 28 38.5	5,316
T. 29 N., R. 23 W., corner of secs. 17, 18, 19, and 20, in line with road north	37 12 50.8	93 28 36.4	5,328
T. 29 N., R. 23 W., quarter corner between secs. 7 and 18, crossroads	37 13 43.5	93 29 07.2	5,883
T. 29 N., R. 23 W., 20 feet north by 15 feet west of quarter corner between secs. 6 and 7, at northeast corner of crossroads, at Wyandotte schoolhouse; iron post stamped "Prim. Trav. Sta. No. 3, 1916 Mo."	37 14 36.1	93 29 05.6	5,325
T. 29 N., R. 23 W., west corner of secs. 6 and 7, in line with road east at crossroads; 35 feet north is T. 29 N., R. 24 W., east corner of secs. 1 and 12, in line with road west	37 14 36.8	93 29 39.2	2,719
Railroad crossing	37 15 05.2	93 29 38.7	2,875
Along St. Louis-San Francisco Ry.			
Springfield station	37 13 50.4	93 17 12.4	.....
Springfield astronomical pier	37 13 12.8	93 17 13.2	.....
Dorchester station	37 12 33.3	93 23 09.1	.....
T. 28 N., R. 23 W., quarter corner north side of sec. 2	37 10 08.8	93 24 52.7	.....
Brookline station	37 09 47.1	93 25 08.7	.....
Nichols Junction	37 13 07.1	93 21 48.7	.....
Elwood station	37 13 32.2	93 25 51.7	.....
T. 29 N., R. 23 W., corner of secs. 9, 10, 15, and 16	37 13 40.1	93 26 23.9	.....

Magnetic declination (1916) for west border of quadrangle, 7.5° E.

STOTTS CITY QUADRANGLE.

South along highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Stinson, at southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 5, 1916 Mo."	37 14 47.5	93 45 08.3	.....
T. 29 N., R. 26 W., quarter corner between secs. 10 and 15, T road south	37 13 55.4	93 45 26.0	5,457
T. 29 N., R. 26 W., quarter corner between secs. 15 and 22, in line with road north and fence east	37 13 02.9	93 45 27.4	5,310
T road east	37 12 23.7	93 45 28.2	3,968
T road east	37 11 58.6	93 46 34.8	5,960
T. 29 N., R. 26 W., quarter corner between secs. 28 and 33, cross-roads	37 11 19.1	93 46 35.8	3,991
Crossroads	37 10 52.2	93 45 46.8	4,809
T. 28 N., R. 26 W., corner of secs. 10, 11, 14, and 15, crossroads	37 08 40.8	93 45 00.8	.....
T. 28 N., R. 26 W., corner of secs. 14, 15, 22, and 23, crossroads (Bull. 496, p. 217)	37 07 48.3	93 45 01.8	5,316

Magnetic declination for north half of east border of quadrangle, 7.4° E.; for north border of quadrangle, 7.3° E.; for north half of west border of quadrangle, 7.6° E.

MISSOURI, KANSAS, AND NEBRASKA.

PRIMARY TRAVERSE.

Atchison, Hiawatha, Maitland, Rulo, Skidmore, and Tarkio quadrangles.

HOLT COUNTY, MO.; BROWN COUNTY, KANS.; RICHARDSON COUNTY, NEBR.

The following geographic positions, on approximate North American datum, were determined by J. H. Wilson in 1916 and are based on primary traverse positions described in Bulletin 644 and upon Missouri River Commission triangulation stations Craig and Napier.

For other positions in Kansas see U. S. Geological Survey bulletins 122, 181, 216, 245, 440, and 644, U. S. Coast and Geodetic Survey Report for 1902, and Missouri River Commission reports for 1887, 1890, and 1891.

ATCHISON QUADRANGLE, KANS.

East along highways near north border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 1 S., R. 17 E., quarter corner between secs. 1 and 12, 10 feet east of T road north	39 59 10.8	95 27 40.1	.....
T. 1 S., Rs. 17 and 18 E., corner of secs. 1, 12, 6, and 7, crossroads	39 59 10.8	95 27 06.0	2,660
T. 1 S., R. 18 E., corner of secs. 5, 6, 7, and 8, crossroads	39 59 11.2	95 26 01.4	5,032
T. 1 S., R. 18 E., corner of secs. 4, 5, 8, and 9, crossroads	39 59 11.8	95 24 53.6	5,280
T. 1 S., R. 18 E., quarter corner between secs. 4 and 9, crossroads	39 59 12.0	95 24 19.7	2,635
T. 1 S., R. 18 E., corner of secs. 3, 4, 9, and 10, T lane north	39 59 12.2	95 23 45.9	2,640
T. 1 S., R. 18 E., corner of secs. 2, 3, 10, and 11, fence south	39 59 12.7	95 22 38.1	5,280
T. 1 S., R. 18 E., quarter corner between secs. 2 and 11	39 59 13.0	95 22 04.2	2,680
T. 1 S., R. 18 E., corner of secs. 1, 2, 11, and 12, crossroads	39 59 13.6	95 21 30.3	2,598
Road west	39 59 13.6	95 20 56.7	2,616

Magnetic declination for north border of quadrangle, 11° 17′ E.

East along Nebraska-Kansas State line. (By J. H. Wilson in 1916.)

T. 1 S., R. 17 E., north corner of secs. 2 and 3, T road south	39 59 59.6	95 29 23.4	.....
T. 1 N., R. 17 E., south corner of secs. 34 and 35, T road north	39 59 59.5	95 28 56.9	2,070
T. 1 S., R. 17 E., north corner of secs. 1 and 2, church, T road south	39 59 59.3	95 28 15.3	3,235
Road east	39 59 58.5	95 27 39.9	2,763
T. 1 S., R. 18 E., quarter corner on north side of sec. 1, T road south, Kansas-Nebraska State line	39 59 59.2	95 20 56.6	.....
Kansas-Nebraska State line, railroad post	40 00 00.0	95 19 52.1	5,020

HIAWATHA QUADRANGLE, KANS.-NEBR.

Along Nebraska-Kansas State line. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Preston, 2 miles south by 0.3 mile west of, 280 feet east of north corner of secs. 4 and 5, T. 1 S., R. 17 E., on north side of State line road, in south foundation wall of barn; aluminum tablet stamped "1028 Prim. Trav. Sta. No. 22, Nebr. 1913"	40 00 02.4	95 31 35.1	
T. 1 S., R. 17 E., north corner of secs. 3 and 4, T road south	39 59 59.6	95 30 30.6	5,028
T. 1 N., R. 17 E., south corner of secs. 33 and 34, T road north	39 59 59.6	95 30 04.6	2,030

Magnetic declination for southeast corner of quadrangle, 9° 55′ E.

RULO QUADRANGLE, NEBR.

West along Burlington Route and highways in south part of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Railroad trestle, center of	40 01 28.0	95 21 31.9	
Namaha River, west end of railroad bridge over	40 01 33.6	95 22 58.4	6,748
T. 1 N., R. 17 E., line between secs. 28 and 29, railroad crossing	40 01 26.0	95 24 24.6	6,750
T. 1 N., R. 17 E., line between secs. 20 and 29, railroad crossing	40 01 42.4	95 25 26.8	5,118
Rulo, west end of railroad bridge over Missouri River, 18 feet east of flagman's shanty	40 03 12.9	95 25 23.8	9,159

Magnetic declination for south border of quadrangle, 8° 57′ E.

MAITLAND QUADRANGLE, MO.

North along highways near west border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road west	40 02 53.6	95 14 45.0	
T. 61 N., R. 39 W., center of sec. 36, T road north	40 03 06.9	95 14 55.7	1,580
T. 61 N., R. 39 W., quarter corner between secs. 25 and 36, fence east	40 03 33.0	95 14 55.7	2,635
T. 61 N., R. 39 W., quarter corner between secs. 24 and 25, cross-roads	40 04 25.2	95 14 55.7	5,290
T. 61 N., R. 39 W., quarter corner between secs. 13 and 24, east-west fence line	40 05 17.5	95 14 55.2	5,295
T. 61 N., R. 39 W., quarter corner between secs. 12 and 13, T road west	40 06 10.1	95 14 54.7	5,320
T. 61 N., R. 39 W., quarter corner between secs. 1 and 12, fence east	40 07 02.3	95 14 54.2	5,280
Railroad crossing	40 07 21.8	95 14 53.7	1,980
Mound City, 1 mile west of, on north side of Mound City-Bigelow road, 40 feet north of center of T road south on line through center of sec. 1, T. 61 N., R. 39 W.; iron post stamped "Prim. Trav. Sta. No. 3, 1916"	40 07 37.4	95 14 53.4	1,578
Mound City, intersection of State and Seventh streets	40 07 56.0	95 13 57.5	4,732
Road forks, at road north on range line	40 08 30.1	95 14 18.9	3,837
T. 62 N., R. 38 W., west corner of secs. 35 and 36	40 08 46.1	95 14 18.5	1,624
T. 62 N., R. 39 W., east corner of secs. 24 and 25, T road west; 50 feet south to west corner of secs. 19 and 30, T. 62 N., R. 38 W	40 09 38.8	95 14 18.5	5,329
T. 62 N., R. 39 W., east corner of secs. 13 and 24, in line with road west; 30 feet south to road east at west corner of secs. 18 and 19 T. 62 N., R. 38 W	40 10 31.2	95 14 18.7	5,305
T. 62 N., R. 39 W., east corner of secs. 12 and 13; 100 feet south to west corner of secs. 7 and 18, T. 62 N., R. 38 W	40 11 24.0	95 14 18.5	5,340
T. 62 N., R. 39 W., east corner of secs. 1 and 12, in line with road west; 50 feet south to west corner of secs. 6 and 7, T. 62 N., R. 38 W., in line with road east	40 12 16.3	95 14 18.5	5,300
Tps. 62 and 63 N., Rs. 38 and 39 W., center of crossroads	40 13 09.0	95 14 18.0	5,325
T. 63 N., Rs. 38 and 39 W., corner of secs. 30, 31, 25, and 36	40 14 01.4	95 14 16.8	5,306
T. 63 N., R. 39 W., east corner of secs. 24 and 25, in line with road west; 50 feet north to T road east at west corner of secs. 19 and 30, T. 63 N., R. 38 W	40 14 53.2	95 14 15.6	5,244

Magnetic declination along west border of quadrangle, 9° 45′ E.

RULO QUADRANGLE, MO.

Along highways and Chicago, Burlington & Quincy R. R. in north part of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 63 N., R. 40 W., corner of secs. 22, 23, 26, and 27, T road west	40 14 54.8	95 23 20.4	.....
T. 63 N., R. 40 W., line between secs. 27 and 28, north-south fence line	40 14 42.1	95 24 28.6	5,440
T. 63 N., R. 40 W., corner of secs. 20, 21, 28, and 29, fence south, 1,300 feet west of bridge over Big Tarkio River	40 14 56.5	95 25 38.6	5,626
T. 63 N., R. 40 W., corner of secs. 19, 20, 29, and 30, 515 feet west of railroad crossing	40 14 57.4	95 26 47.1	5,311
Corning, 900 feet northwest of depot, 75 feet west and 15 feet north of railroad crossing; iron post stamped "Prim. Trav. Sta. No. 6, 1916"	40 14 57.8	95 27 24.3	2,891
T. 63 N., R. 40 W., line between secs. 29 and 32, railroad crossing	40 14 04.5	95 26 08.3	7,989
T. 62 N., R. 40 W., line between secs. 3 and 4, north-south road crossing	40 12 59.7	95 24 36.0	9,705
T. 62 N., R. 40 W., line between secs. 10 and 11, north-south road crossing	40 12 10.8	95 23 26.4	7,324
Craig, railroad crossing at north side of depot, main track	40 11 30.6	95 22 29.2	6,021
T. 62 N., R. 40 W., corner of secs. 1, 2, 11, and 12, 10 feet north of T lane east	40 12 17.3	95 22 15.7	4,848
Craig triangulation station, Missouri River Commission, is on the left bank, in a wooded pasture, on a hill 1.5 miles north by west from Craig, Mo., just east of the road, and in the northeast corner of sec. 2, T. 62 N., R. 40 W.; station mark: an iron post, which was dug up by farmer in 1916; post is lying near by, point shown by farmer; witness tree marked "U. S." about 90 feet southwest and on opposite side of road	40 13 02.05	95 22 41.71	4,958

East along Burlington Route and highways in southeast part of quadrangle.

Missouri River, east end of railroad bridge over	40 03 18.8	95 24 58.8	.....
T. 61 N., R. 40 W., line between secs. 26 and 27, north-south road crossing	40 03 39.5	95 23 30.1	7,215
T. 61 N., R. 40 W., line between secs. 35 and 36, north-south road crossing	40 03 19.5	95 22 22.5	5,634
Railroad crossing, north-south road	40 03 11.7	95 21 48.0	2,794
T. 61 N., Rs. 39 and 40 W., probably on line between, center of trestle 5-19, in line with fence north through lake	40 03 11.4	95 21 11.7	2,830
T. 61 N., R. 39 W., line between secs. 31 and 32, north-south road crossing	40 03 10.6	95 20 00.9	5,505
Fortescue, railroad crossing, 300 feet west of depot	40 03 10.1	95 19 08.9	4,050
Tps. 60 and 61 N., R. 39 W., line between secs. 6 and 31, center of north-south road, at fence east	40 02 43.5	95 19 12.2	2,708
T. 60 N., R. 39 W., quarter corner between secs. 6 and 7, T road north	40 02 33.1	95 19 12.3	1,050
T. 60 N., R. 39 W., corner of secs. 5, 6, 7, and 8, T road south	40 02 32.7	95 18 38.4	2,640
T. 60 N., R. 39 W., line between secs. 17 and 18, telephone pole at bend in road	40 01 22.8	95 18 39.4	7,080
Road forks at road east, center of triangle	40 00 47.9	95 17 55.8	4,893
T. 60 N., R. 39 W., quarter corner between secs. 16 and 21, T road west, lane east	40 00 47.8	95 16 58.6	4,452
T. 60 N., R. 39 W., quarter corner between secs. 15 and 22, center of north-south road, in line with fence east, 980 feet south of Exodus schoolhouse	40 00 47.9	95 15 51.3	6,570
T. 60 N., R. 39 W., quarter corner between secs. 3 and 10, T road south	40 02 31.9	95 15 50.4	10,525
Napier, 0.5 mile southeast of, railroad crossing, center of track	40 02 31.5	95 15 05.2	3,515
Napier triangulation station is on the left bank, on a narrow, bare ridge, three-fourths of a mile east-south-east of Napier railroad station, and just east of the graveyard on the hillside; station mark: an iron post	40 02 47.22	95 14 35.89	2,783

Magnetic declination for south border of quadrangle, 8° 57′ E.; for north part of quadrangle, 9° 24′ E.

ATCHISON QUADRANGLE, MO.

(By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 60 N., R. 39 W., quarter corner between secs. 21 and 28	39 59 55.6	95 16 59.1	
T. 60 N., R. 39 W., 0.25 mile south of quarter corner between secs. 22 and 27, 30 feet north and 20 feet east of large elm tree on east side of north and south road; iron post stamped "Prim. Trav. Sta. No. 2, 1916"	39 59 43.0	95 15 51.3	5,433

SKIDMORE QUADRANGLE, MO.

In southwest portion of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 63 N., R. 39 W., east corner of secs. 13 and 24, 45 feet north and 18 feet east of, and T. 63 N., R. 38 W., 15 feet north and 18 feet east of west corner of secs. 18 and 19, at northeast corner of cross-roads, on north side of road, on Atchison-Holt county line; iron post stamped "Prim. Trav. Sta. No. 4, 1916"	40 15 46.2	95 14 14.3	

TARKIO QUADRANGLE, MO.

West along highways near south border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 63 N., R. 39 W., corner of secs. 13, 14, 23, and 24, crossroads	40 15 46.0	95 15 22.8	
T. 63 N., R. 39 W., corner of secs. 14, 15, 22, and 23, crossroads	40 15 45.9	95 16 31.5	5,320
T. 63 N., R. 39 W., corner of secs. 15, 16, 21, and 22, crossroads	40 15 45.6	95 17 39.9	5,310
T. 63 N., R. 39 W., corner of secs. 16, 17, 20, and 21, crossroads	40 15 45.8	95 18 48.6	5,325
T. 63 N., R. 39 W., corner of secs. 17, 18, 19, and 20, T road north	40 15 45.8	95 19 58.6	5,425
T. 63 N., Rs. 39 and 40 W., corner of secs. 18, 19, 13, and 24, in line with road east	40 15 46.2	95 21 03.1	5,005
T. 63 N., Rs. 39 and 40 W., quarter corner between secs. 19 and 24, T road west, lane east	40 15 20.1	95 21 03.4	2,640
T. 63 N., R. 40 W., quarter corner between secs. 23 and 24, 10 feet south and 5 feet west of, on south side of east-west road at T road north; iron post stamped "Prim. Trav. Sta. No. 5, 1916"	40 15 20.7	95 22 11.3	5,261
T. 63 N., R. 40 W., quarter corner stone between secs. 22 and 23, T road east	40 15 21.0	95 23 20.5	5,370

Magnetic declination along east part of south border of quadrangle, 9° 19′ E.

NEBRASKA AND IOWA.

PRIMARY TRAVERSE.

FORT OMAHA BALLOON FIELD.

Arlington, Ascot, Blair, Calhoun, Chalco, Elkhorn, Florence, Irvington, Kennard, Ralston, and Waterloo 7½′ quadrangles, Nebraska; Florence, Honey Creek, and Omaha vicinity quadrangles, Iowa.

DOUGLAS AND WASHINGTON COUNTIES, NEBR., POTTAWATTAMIE COUNTY, IOWA.

The following geographic positions on approximate North American datum were determined by Oscar Jones, in 1917, and are based on positions of the Missouri River Commission triangulation stations near Omaha.

For other positions in Nebraska see U. S. Geological Survey Bulletins 201, 276, and 644, Part I of the Eighteenth and Nineteenth Annual Reports, Special Publication No. 19 of the U. S. Coast and Geodetic Survey, and Annual Reports for 1901 and 1911 of the latter Survey; see also Reports of the Missouri River Commission for 1891 and 1893.

For other positions in Iowa see U. S. Geological Survey Bulletins 181, 201, 276, 440, 496, 551, and 644, and Eighteenth Annual Report, Part I, Reports of the Missouri River Commission for 1891 and 1893, and Reports of the Mississippi River Commission for 1893, 1894, and 1895.

ARLINGTON QUADRANGLE, NEBR.

West and south along highways and section lines. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 17 N., R. 10 E., corner of secs. 13, 14, 23, and 24, crossroads	41 26 11.7	96 15 07.3	.....
T. 17 N., R. 10 E., corner of secs. 14, 15, 22, and 23, crossroads	41 26 12.0	96 16 16.8	5,290
T. 17 N., R. 10 E., corner of secs. 15, 16, 21, and 22, T road north	41 26 11.9	96 17 26.2	5,285
T. 17 N., R. 10 E., 30 feet north by 30 feet east of crossroads, corner of secs. 16, 17, 20, and 21; iron post stamped "Prim. Trav. Sta. No. 28, 1292, 1917"	41 26 12.2	96 18 34.8	5,231
Center of overhead bridge, Chicago & Northwestern Ry	41 25 46.3	96 18 35.4	2,627
T. 17 N., R. 10 E., corner of secs. 20, 21, 28, and 29, T road east	41 25 19.6	96 18 35.4	2,700
T. 17 N., R. 10 E., quarter corner between secs. 28 and 29, T road west	41 24 53.6	96 18 35.3	2,625
Center of bridge	41 24 33.3	96 18 26.5	2,170
Center of bridge	41 23 39.2	96 17 52.0	6,069
T. 16 N., R. 10 E., corner of secs. 3, 4, 9, and 10	41 22 43.8	96 17 32.7	5,802
T. 16 N., R. 10 E., southwest corner of sec. 3, north side of road, at road fork southeast; iron post stamped "Prim. Trav. Sta. No. 29, 1144, 1917"	41 22 44.0	96 17 29.5	242
T. 16 N., R. 10 E., south corner of secs. 2 and 3, fence line	41 22 43.5	96 16 22.2	5,130
Crossroads, 0.5 mile north of Elk City	41 22 43.5	96 16 05.0	1,318
T. 16 N., R. 10 E., north corner of secs. 2 and 3, 0.5 mile east of T road south	41 23 34.8	96 16 04.4	5,201
T. 16 N., R. 10 E., corner of secs. 1 and 2	41 23 34.9	96 15 11.9	4,000
T. 17 N., R. 10 E., corner of secs. 34 and 35, T road north	41 23 34.8	96 15 07.2	362

ASCOT QUADRANGLE, NEBR.

Southeast along highways. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 17 N., R. 13 E., quarter corner of secs. 7 and 18, fence line	41 27 03.7	95 59 33.4	.....
T. 17 N., R. 13 E., 35 feet north by 25 feet west of corner of secs. 7, 8, 17, and 18, at crossroads; iron post stamped "Prim. Trav. Sta. No. 10"	41 27 03.8	95 58 58.9	2,625
T. 17 N., R. 13 E., quarter corner between secs. 19 and 20, crossroads	41 25 45.0	95 58 59.0	7,974
T. 17 N., R. 13 E., near west quarter corner of sec. 29, northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. 11, 1116, 1917."	41 24 54.1	95 58 58.6	5,159
Road fork	41 23 38.0	95 58 58.5	7,698
T. 17 N., R. 13 E., south corner of secs. 31 and 32, Douglas-Washington county line	41 23 34.7	95 58 59.0	339
T. 16 N., R. 13 E., road fork, 310 feet east of quarter corner between secs. 5 and 6	41 23 16.2	95 59 03.6	1,900
Road fork at school	41 22 30.9	95 58 36.6	5,027
T road north, on line between secs. 8 and 9, T. 16 N., R. 13 E.; 50 feet east is T road south at north end of bridge	41 22 35.6	95 57 58.9	2,920
Center of iron bridge	41 22 36.0	95 57 24.0	2,662

Magnetic declination for southeast quarter of quadrangle, 8.9° E.

ASCOT QUADRANGLE, NEBR.—Continued.

Along Chicago, St. Paul, Minneapolis & Omaha Ry. in southwest part of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Railroad crossing, center of	41 25 06.8	95 59 40.6	.....
Railroad crossing	41 24 32.8	95 59 47.6	3,481
Coffman station, 500 feet north of, at road crossing	41 24 23.8	95 59 49.2	920
West along highways in south part of quadrangle.			
Road fork	41 23 07.5	95 56 45.3	.....
Douglas-Washington county line crossing road	41 23 34.4	95 56 38.2	2,787
Old Rockport, 260 feet northwest of bridge and road fork; iron post stamped (?) "Prim. Trav. Sta. No. 14" (M. R. C. p. b. m.)	41 23 50.3	95 56 32.3	1,672
Road fork at well	41 24 25.0	95 56 46.3	3,671
Road fork	41 24 49.4	95 57 07.2	2,940
Road fork	41 24 58.89	95 57 15.5	1,159
T road south	41 25 19.0	95 57 15.9	2,034
Road fork	41 25 44.6	95 57 32.9	2,896
T. 17 N., R. 13 E., quarter corner between secs. 20 and 21, T road north	41 25 44.8	95 57 50.3	1,320
Road fork	41 25 31.7	95 58 23.2	2,829
Crossroads at school	41 24 43.5	95 58 23.3	4,890

Magnetic declination for southwest quarter of quadrangle, 9.1° E.

BLAIR QUADRANGLE, NEBR.

Northwest along highways. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads, 100 feet west is corner of section	41 30 32.3	96 06 58.3	.....
T road west (Blair triangulation station not found)	41 30 58.4	96 07 32.4	3,707
Blair, 1 mile south of, near center of sec. 13, T. 18 N., R. 11 E, at southwest corner of T road south, road fork; iron post stamped "Prim. Trav. Sta. No. 7, 1120, 1917"	41 31 46.4	96 07 35.4	4,860
Blair, Union Soldiers' Monument	41 32 26.3	96 08 09.6	4,810
Blair, Danish College cupola (Missouri River Commission tie point)	41 33 03.16	96 09 22.06	6,656
North to base line.			
T. 18 N., R. 11 E., quarter corner between secs. 1 and 12, crossroads	41 33 08.8	96 07 34.9	.....
Tps. 18 and 19 N., R. 11 E., quarter corner between secs. 1 and 36, T road east	41 34 01.0	96 07 34.8	5,290
T. 19 N., R. 11 E., quarter corner between secs. 25 and 36, crossroads	41 34 53.6	96 07 34.8	5,320
T. 19 N., R. 11 E., center of sec. 25, crossroads	41 35 19.7	96 07 34.7	2,650
T. 19 N., R. 11 E., quarter corner between secs. 24 and 25, T road east	41 35 45.7	96 07 34.6	2,630
Blair, 5 miles north, on base line, 3,417 feet west of East Base station, on east side of north-south road, 0.25 mile north of south quarter post of sec. 14, T. 19 N., R. 11 E., 0.25 mile south of W. Tyson's house; copper bolt in tile surmounted by iron pipe, iron post (Mo. R. Comm. b. m. 128/2). Copper bolt, elev., 1,013.41 feet. Cap on pipe, elev., 1,017.49 feet.	41 36 51.4	96 07 33.9	6,649
Blair, East Base, Missouri River Commission station, on right bank, 0.25 mile southeast from W. Tyson's house, near center of SW. ¼ sec. 18, T. 19 N., R. 12 E. (not found in 1917)	41 36 51.41	96 06 48.83	3,417
Southeast along highways.			
Road fork	41 31 09.3	96 06 10.1	.....
Road fork, road west on section line	41 31 00.7	96 05 55.8	1,397
Road fork	41 30 48.4	96 05 18.1	3,119
Road fork	41 30 31.6	96 04 29.4	4,081

BLAIR QUADRANGLE, NEBR.—Continued.

Southeast along highways near south border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road west	41 30 58.4	96 07 32.4	.....
T. 18 N., R. 11 E., center of sec. 24	41 30 58.2	96 07 35.1	210
T. 18 N., R. 11 E., fence line, quarter corner between secs. 24 and 25.	41 30 32.2	96 07 35.4	2,630
T. 18 N., R. 11 E., T road west, center of sec. 35	41 30 06.0	96 07 35.6	2,652
T. 18 N., R. 11 E., T road south, quarter corner between secs. 25 and 26	41 30 06.0	96 08 10.0	2,620
T. 18 N., R. 11 E., crossroads at school, center of sec. 26	41 30 06.0	96 08 44.8	2,650
T. 18 N., R. 11 E., fence line, quarter corner between secs. 26 and 27.	41 30 06.2	96 09 19.6	2,650
Road fork	41 30 06.2	96 09 34.4	1,119

CALHOUN QUADRANGLE, NEBR.

Northeast along highways. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 16 N., Rs. 11 and 12 E., corner of secs. 1, 6, 7, and 12, crossroads.	41 22 44.4	96 07 10.8	.....
T. 17 N., R. 11 E., 680 feet west of southeast corner of sec. 36 on Douglas–Washington county line, 30 feet north of corner of secs. 1 and 6, T. 16 N., Rs. 11 and 12 E., on north side of road opposite T road south; iron post stamped "Prim. Trav. Sta. No. 5, 1248"	41 23 35.2	96 07 11.0	5,136
T. 17 N., Rs. 11 and 12 E., corner of secs. 31 and 36, T road north	41 23 34.9	96 07 02.1	678
T. 16 N., R. 12 E., quarter corner of sec. 6, T road south	41 23 35.0	96 06 37.3	1,890
T. 16 N., R. 12 E., corner of secs. 5 and 6, fence line	41 23 35.1	96 06 02.8	2,630
T. 17 N., R. 12 E., corner of secs. 31 and 32, T road north	41 23 35.1	96 05 53.1	739
T. 17 N., R. 12 E., corner of secs. 29, 30, 31 and 32, T road west	41 24 27.2	96 05 53.0	5,280
T. 17 N., R. 12 E., quarter corner between secs. 29 and 30, crossroads at school	41 24 53.2	96 05 52.7	2,630
T. 17 N., R. 12 E., corner of secs. 19, 20, 29, and 30, T road east	41 25 19.4	96 05 52.7	2,650
T. 17 N., R. 12 E., corner of secs. 7, 8, 17, and 18, T road south	41 27 03.4	96 05 52.8	5,240
T road south	41 27 03.5	96 05 35.1	1,348
Road fork	41 27 25.9	96 05 13.4	2,802
Road fork	41 27 56.7	96 05 52.1	4,286
T. 17 N., R. 12 E., fence line, 0.25 mile north of corner of secs. 5, 6, 7, and 8	41 28 08.6	96 05 52.3	1,214
T. 17 N., R. 12 E., quarter corner between secs. 5 and 6, road fork	41 28 18.7	96 05 52.4	1,020
Road fork	41 28 28.1	96 05 52.3	950
Tps. 17 and 18 N., R. 12 E., 140 feet east of quarter corner between secs. 6 and 31, at road fork; iron post stamped (?) "Prim. Trav. Sta. No. 6"	41 28 47.9	96 06 21.3	2,978
Center of iron bridge	41 29 18.9	96 06 25.5	3,155
Large cottonwood tree on west side of road	41 29 45.6	96 06 39.3	2,901

Southeast along highways.

Center of concrete culvert	41 29 59.1	96 03 47.5	.....
DeSoto, in angle of east-west and north-south roads, 250 feet northeast from J. E. Markel's house, in SE. ¼ sec. 28, T. 18 N., R. 12 E., 890 feet west of east line and 1,300 feet north of south line of section; copper bolt in tile surmounted by iron pipe; iron post stamped "Prim. Trav. Sta. No. 8, Mo. R. Comm. b. m. 126/1" Copper bolt, elevation, 1,016.80 feet. Cap on pipe, elevation, 1,020.87 feet.	41 29 52.3	96 03 45.2	708
Center of concrete culvert	41 28 59.7	96 03 05.6	6,124
Road fork	41 28 47.0	96 02 45.4	2,000
North end of iron bridge	41 28 27.2	96 01 53.2	4,449
T. 17 N., R. 12 E., right angle turn in road, 0.25 mile south of quarter corner of secs. 2 and 11	41 27 45.1	96 01 50.0	4,258
Crossroads	41 27 27.9	96 01 38.8	1,937
Fort Calhoun, cross streets at Washington County Bank	41 27 20.2	96 01 34.2	854
Old Fort Calhoun, 800 feet south of site of old fort, in corner of yard of A. M. Beals, 650 feet N., 1° W. (mag.) from south quarter post of sec. 12, T. 17 N., R. 12 E.; copper bolt in tile surmounted by iron pipe; iron post stamped "Prim. Trav. Sta. No. 11, and U. S. Mo. R. b. m. (Mo. R. Comm. b. m. 125/1)" Copper bolt, elevation, 1,064.73 feet. Cap on pipe, elevation, 1,068.82 feet.	41 27 09.1	96 00 55.6	3,146
T. 17 N., R. 11 E., corner of secs. 7, 12, 13, and 18, center of road	41 27 03.6	96 00 07.5	3,708

CALHOUN QUADRANGLE, NEBR.—Continued.

Northeast along Chicago & Northwestern Ry.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	41 22 31.4	96 00 36.9	.....
Center of steel bridge	41 22 55.4	96 00 26.2	2,569
Douglas-Washington county line	41 23 34.8	96 00 22.1	4,004
North end of trestle	41 23 59.8	96 00 03.9	2,882

Magnetic declination for northeast part of quadrangle, 9.4° E.; for southeast part of quadrangle, 8.8° E.

Along highways west through center of quadrangle.

Quarter-section corner	41 27 03.2	96 01 43.5	.....
Bridge, center of	41 27 03.8	96 02 41.0	4,381
Bridge, center of	41 27 03.2	96 02 52.0	832
T. 17 N., R. 12 E., corner of secs. 9, 10, 15, and 16	41 27 03.6	96 03 33.6	3,169
T. 17 N., R. 12 E., quarter corner between secs. 15 and 16, cross-roads	41 26 37.0	96 03 33.7	2,690
T. 17 N., R. 12 E., center of sec. 16, T road east	41 26 37.3	96 04 08.8	2,670
T. 17 N., R. 12 E., between secs. 9 and 16, fence line	41 27 03.3	96 04 03.3	2,670
T. 17 N., R. 12 E., center of sec. 9, crossroads	41 27 25.9	96 04 08.2	2,320
T. 17 N., R. 12 E., in S. E. ¼ sec. 8, at road forks; iron post stamped "Prim. Trav. Sta. No. 18, 1130, 1917"	41 27 19.0	96 04 51.8	3,400

Along highways west through south half of quadrangle.

Stone bridge, center of	41 24 27.1	96 00 46.0	.....
T. 17 N., Rs. 12 and 13 E., corner of secs. 25, 30, 31, and 36, crossroads	41 24 27.2	96 01 16.8	2,350
T. 17 N., R. 12 E., 1,386 feet east of corner of secs. 26, 27, 34, and 35, T road south	41 24 27.1	96 02 07.6	3,879
T. 17 N., R. 12 E., on line through center of sec. 35, center of road at fence line	41 24 01.1	96 02 12.7	2,664
T. 17 N., R. 12 E., quarter corner of sec. 2, crossroads on Douglas-Washington county line	41 23 34.9	96 01 59.9	2,827
T. 17 N., R. 12 E., south corner of secs. 34 and 35, fence line north	41 23 34.8	96 02 23.4	1,790
T. 17 N., R. 12 E., quarter corner, south side of sec. 34, T road north	41 23 34.8	96 03 00.1	2,800
T. 16 N., R. 12 E., quarter corner on north side of sec. 3, T road south	41 23 34.8	96 03 09.0	680
T. 17 N., R. 12 E., southwest corner of sec. 34, 20 feet north by 30 feet east of T road north; (primary traverse station No. 15) iron post stamped "Prim. Trav. Sta. No. —, 1237, 1917"	41 23 35.2	96 03 34.2	1,930
T. 17 N., R. 12 E., quarter corner on south side of sec. 33, fence line	41 23 34.9	96 04 09.3	2,670
T. 17 N., R. 12 E., corner of secs. 32 and 33, T road north	41 23 34.9	96 04 43.8	2,630
T. 16 N., R. 12 E., corner of secs. 4 and 5, T road south	41 23 34.9	96 04 52.8	690

Along highways in east part of quadrangle.

T. 17 N., R. 12 E., 720 feet east by 30 feet north of corner of secs. 22, 23, 26, and 27, northeast corner of crossroads; iron post stamped (?) "Prim. Trav. Sta. No. 16, 1338, 1917"	41 25 19.5	96 02 16.6	.....
Road fork	41 26 16.3	96 02 07.5	5,792
Road fork at L. Lundman	41 26 47.5	96 01 55.4	3,291
Road fork	41 26 54.1	96 01 34.3	1,750

Magnetic declination for center of quadrangle, 9.6° E.; for south part and east part of quadrangle, 9.5° E.

Southeast along highways in northeast corner of quadrangle. (By Oscar Jones in 1917.)

T. 17 N., line between Rs. 11 and 12 E., near corner of secs. 7, 18, 12, and 13	41 26 55.9	96 07 02.0	.....
Large cottonwood tree, north side of road	41 26 55.0	96 06 46.0	1,219
Road fork	41 26 03.5	96 05 35.1	5,469

CHALCO QUADRANGLE, NEBR.

South along range line near east border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 15 N., Rs. 10 and 11 E., corner of secs. 19, 24, 25, and 30, crossroads	41 14 53.2	96 14 04.6	.....
T. 15 N., Rs. 10 and 11 E., corner of secs. 25, 30, 31, and 36, crossroads	41 14 01.0	96 14 04.4	5,283
T. 15 N., Rs. 10 and 11 E., quarter corner between secs. 31 and 36, T road west	41 13 34.9	96 14 04.2	2,649
Tps. 14 and 15 N., Rs. 10 and 11 E., 35 feet south by 30 feet east of crossroads at township corner; iron post stamped "Prim. Trav. Sta. No. 36, 1262, 1917"	41 13 08.4	96 14 03.8	2,676
Center of concrete bridge	41 12 42.6	96 14 04.2	2,620
T. 14 N., Rs. 10 and 11 E., stone corner of secs. 1, 6, 7, and 12, crossroads	41 12 16.6	96 14 04.1	2,624

East along highways through center of quadrangle.

Center of wooden bridge	41 12 17.0	96 13 24.4	3,040
T. 14 N., R. 11 E., corner of secs. 5, 6, 7, and 8, crossroads	41 12 17.3	96 12 56.5	2,130
T. 14 N., R. 11 E., corner of secs. 4, 5, 8, and 9, crossroads	41 12 17.8	96 11 47.8	5,249
T. 14 N., R. 11 E., crossroads, 40 feet south by 35 feet west of corner of secs. 3, 4, 9, and 10; iron post stamped "Prim. Trav. Sta. No. 37, 1169, 1917"	41 12 17.5	96 10 39.1	5,249
T. 14 N., R. 11 E., quarter corner between secs. 3 and 10, T road south	41 12 17.9	96 10 03.9	2,685
T. 14 N., R. 11 E., corner of secs. 2, 3, 10, and 11, crossroads	41 12 18.3	96 09 29.4	2,640
T. 14 N., R. 11 E., corner of secs. 1, 2, 11, and 12, crossroads	41 12 18.5	96 08 19.6	5,330
T. 14 N., R. 11 E., quarter corner between secs. 1 and 12, T road west	41 12 18.0	96 07 45.1	2,638

Magnetic declination through center of quadrangle, 9.6° E.

South along highways near middle of quadrangle. (By Oscar Jones in 1917.)

T. 15 N., R. 11 E., corner of secs. 21, 22, 27, and 28, crossroads	41 14 54.0	96 10 37.0	.....
T. 15 N., R. 11 E., corner of secs. 27, 28, 33, and 34, crossroads	41 14 01.5	96 10 36.9	5,305
Tps. 14 and 15 N., R. 11 E., corner of secs. 3, 4, 33, and 34, crossroads	41 13 09.4	96 10 37.7	5,280
T. 14 N., R. 11 E., Prim. Trav. Sta. No. 37 (previously described)	41 12 17.5	96 10 39.1	5,254

ELKHORN QUADRANGLE, NEBR.

North along highways. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tps. 15 and 16 N., R. 11 E., corner of secs. 1, 2, 35, and 36, crossroads	41 18 23.2	96 08 19.2	.....
T. 16 N., R. 11 E., corner of secs. 25, 26, 35, and 36, crossroads	41 19 15.5	96 08 19.4	5,288
T. 16 N., R. 11 E., corner of secs. 23, 24, 25, and 26, crossroads	41 20 07.8	96 08 19.9	5,301
T road north, east end of bridge	41 20 07.8	96 07 41.8	2,902
T. 16 N., R. 11 E., quarter corner between secs. 13 and 24, T road east	41 21 00.2	96 07 44.8	5,311

South along highways near west border of quadrangle.

Elkhorn, T road west opposite Farmers Bank	41 16 59.0	96 14 13.2	.....
Tie point (1032)	41 16 52.0	96 14 04.3	982
T. 15 N., Rs. 10 and 11 E., corner of secs. 13, 18, 19, and 24, 30 feet east by 20 feet south of crossroads, iron post stamped "Prim. Trav. Sta. No. 35, 1244, 1917"	41 15 45.3	96 14 04.1	6,753
T. 15 N., Rs. 10 and 11 E., quarter corner between secs. 19 and 24, fence line	41 15 19.3	96 14 04.8	2,632

ELKHORN QUADRANGLE, NEBR.—Continued.

East along highways near north border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 16 N., R. 10 E., quarter corner between secs. 13 and 24, fence line	41 20 58.9	96 14 38.4	.....
T. 16 N., Rs. 10 and 11 E., corner of secs. 13, 18, 19, and 24, 40 feet south by 30 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 40, 1295, 1917"	41 20 58.4	96 14 03.9	2,625
T. 16 N., R. 11 E., quarter corner of secs. 18 and 19	41 20 58.9	96 13 32.9	2,363
Center of bridge	41 20 59.0	96 13 09.7	1,773
T. 16 N., R. 11 E., quarter corner between secs. 17 and 20, T road south	41 20 59.1	96 12 23.4	3,526
T. 16 N., R. 11 E., corner of secs. 16, 17, 20, and 21, T road north	41 20 59.4	96 11 49.0	2,622
T. 16 N., R. 11 E., center of concrete culvert	41 20 59.6	96 11 14.9	2,597
T. 16 N., R. 11 E., about 500 feet south of corner of secs. 15, 16, 21, and 22, 1 mile south by 1 mile west of Bennington, 20 feet northeast of crossroads; iron post stamped "Prim. Trav. Sta. No. 41, 1185, 1917"	41 20 55.5	96 10 39.1	2,761
T road south	41 20 33.6	96 09 54.0	4,091
T. 16 N., R. 11 E., quarter corner between secs. 22 and 23, T road west	41 20 33.5	96 09 30.2	1,812
Crossroads at school	41 20 07.5	96 09 09.0	3,092
T. 16 N., R. 11 E., corner of secs. 23, 24, 25, and 26, crossroads	41 20 07.8	96 08 19.9	3,747
North along highways through center of quadrangle.			
T. 16 N., R. 11 E., corner of secs. 16, 17, 20, and 21, T road north	41 20 59.4	96 11 49.0	.....
T. 16 N., R. 11 E., quarter corner between secs. 16 and 17, fence line	41 21 25.4	96 11 48.9	2,638
T. 16 N., R. 11 E., corner of secs. 8, 9, 16, and 17, crossroads	41 21 51.6	96 11 49.0	2,645
Center of wooden bridge	41 22 15.1	96 11 49.1	2,389
South along highways near center of quadrangle.			
T. 16 N., R. 11 E., quarter corner between secs. 17 and 20, T road south	41 20 59.1	96 12 23.4	.....
T. 16 N., R. 11 E., center of sec. 20, fence line	41 20 33.2	96 12 23.2	2,627
T. 16 N., R. 11 E., quarter corner between secs. 20 and 29, crossroads	41 20 07.1	96 12 23.0	2,651
Center of concrete bridge	41 19 45.5	96 12 22.8	2,180
T. 16 N., R. 11 E., quarter corner between secs. 29 and 32, T road north	41 19 14.9	96 12 22.5	3,103
T. 16 N., R. 11 E., corner of secs. 28, 29, 32, and 33, T road south	41 19 14.9	96 11 47.8	2,645
Tps. 15 and 16 N., R. 11 E., corner of secs. 4, 5, 32, and 33, crossroads	41 18 22.7	96 11 47.1	5,287
North and east along highways.			
T. 15 N., Rs. 10 and 11 E., tie point	41 16 52.0	96 14 04.3	.....
T. 15 N., Rs. 10 and 11 E., corner of secs. 1, 6, 7, and 12, crossroads	41 17 30.0	96 14 04.1	3,840
Tps. 15 and 16 N., Rs. 10 and 11 E., 35 feet north by 30 feet east of crossroads, corner of secs. 1, 6, 31, and 36; iron post stamped "Prim. Trav. Sta. No. 43, 1258, 1917"	41 18 22.6	96 14 03.7	5,323
Tps. 15 and 16 N., R. 11 E., corner of secs. 5, 6, 31, and 32, fence line	41 18 22.4	96 12 56.4	5,130
Center of wooden bridge	41 18 22.6	96 12 13.1	3,300
Tps. 15 and 16 N., R. 11 E., corner of secs. 4, 5, 32, and 33, crossroads	41 18 22.7	96 11 47.1	1,984
Tps. 15 and 16 N., R. 11 E., 30 feet north by 35 feet west of crossroads, corner of secs. 3, 4, 33, and 34; iron post stamped "Prim. Trav. Sta. No. 42, 1216, 1917"	41 18 23.1	96 10 38.4	5,238
Tps. 15 and 16 N., R. 11 E., corner of secs. 2, 3, 34, and 35, crossroads	41 18 23.1	96 09 28.7	5,312
Tps. 15 and 16 N., R. 11 E., corner of secs. 1, 2, 35, and 36, crossroads	41 18 23.2	96 08 19.2	5,300
South along highways near center of quadrangle.			
Prim. Trav. Sta. No. 42 (previously described)	41 18 23.1	96 10 38.4	.....
T. 15 N., R. 11 E., corner of secs. 3, 4, 9, and 10, crossroads	41 17 30.7	96 10 38.6	5,303
T. 15 N., R. 11 E., corner of secs. 9, 10, 15, and 16, crossroads	41 16 38.5	96 10 37.7	5,287
T. 15 N., R. 11 E., corner of secs. 15, 16, 21, and 22, 35 feet south by 30 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 44, 1127, 1917"	41 15 45.8	96 10 37.0	5,335
T. 15 N., R. 11 E., quarter corner between secs. 21 and 22, fence line	41 15 23.0	96 10 37.2	2,310

Magnetic declination for north border of quadrangle, 8.9° E.; for line through center of quadrangle, 8.4° E.; for two lines near center of quadrangle, 9.2° E.; for north and east borders of quadrangle, 9.1° E.

FLORENCE QUADRANGLE, NEBR.

West along highways. (By Oscar Jones in 1911.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Omaha, west end of steel truss	41 15 30.8	95 55 22.9	.....
Omaha, west abutment of bridge	41 15 30.7	95 55 37.8	1,139
Omaha, center of Davenport and Twelfth streets	41 15 41.3	95 55 54.2	1,650
Omaha, center of Davenport and Nineteenth streets	41 15 41.6	95 56 27.7	2,553
Omaha, in old Capitol grounds (present High School), U. S. C. & G. S. astronomic pier (old pier; tied to in 1917); (see Report of Chief of Engineers, 1891, p. 3782)	41 15 35.94	95 56 35.72	836
Omaha, astronomic pier (new, in 1912) (not tied to by Jones 1917), U. S. C. & G. S.	41 15 37.22	95 56 39.58	.....
Omaha, center of Cuming and Nineteenth streets	41 16 04.3	95 56 27.6	.....
Omaha, center of Cuming and Twenty-seventh streets	41 16 04.2	95 57 05.8	2,913
Omaha, center of Cuming and Thirty-second streets	41 16 04.2	95 57 36.8	2,370
Omaha, center of Cuming and Fortieth streets	41 16 04.1	95 58 22.0	3,455
Omaha, center of Stewart Street and Military Avenue	41 16 26.4	95 58 40.8	2,679
T. 15 N., R. 13 E., corner of secs. 7, 8, 17, and 18, Blondo and Forty-Eighth streets	41 16 39.8	95 59 07.1	2,422
T. 15 N., R. 13 E., quarter corner between secs. 7 and 18, Blondo and Fifty-Second streets	41 16 39.4	95 59 40.4	2,545
Southeast along highways.			
Center of concrete culvert, 100 feet south of road fork	41 22 25.4	95 57 12.0	.....
Fence line east and west on section line between secs. 9 and 16, T. 16 N., R. 13 E.	41 21 52.1	95 57 30.4	3,662
Center of concrete bridge at road fork	41 21 33.2	95 57 39.0	2,033
Florence (Mo. R. Comm. base); iron post stamped "Prim. Trav. Sta. No. 12"	41 20 34.4	95 57 30.6	5,996
Florence Water Works, flagstaff on pump house (Mo. R. Comm. secondary station)	41 20 34.90	95 57 32.67	165
Florence Water Works steel flag staff erected about 1890	41 20 35.0	95 57 30.5	169
Southeast along Chicago, St. Paul, Minneapolis & Omaha Ry.			
Road fork, 100 feet south of Florence station	41 20 05.6	95 57 20.6	.....
Road crossing, railroad above road	41 19 37.2	95 56 58.3	3,337
Road crossing	41 19 23.2	95 56 42.0	1,882
Tps. 15 and 16 N., R. 13 E., 35 feet south by 40 feet east of quarter corner between secs. 3 and 34; iron post Prim. Trav. Sta. No. 13, cap gone (Mo. R. Comm. b. m. 122-1)	41 18 23.3	95 56 13.4	6,444
Ames Avenue, crossing of	41 17 58.3	95 56 05.4	2,602
Omaha, center of Locust and Thirteenth streets, 0.25 mile east of sec. 10, T. 15 N., R. 13 E.; iron post	41 17 06.1	95 55 56.9	5,322
Omaha, center of Locust Street and Illinois Central R. R. crossing	41 17 05.4	95 54 58.0	4,492
Omaha, center of Locust and Twenty-Eighth streets	41 17 05.3	95 53 42.4	5,770
Omaha, west abutment of Illinois Central R. R. bridge over Wisconsin River	41 16 47.4	95 53 36.5	1,881
West end of steel truss	41 16 44.1	95 53 31.4	512
West along Chicago & Northwestern Ry. from Florence to Coffman.			
Road crossing	41 20 35.9	95 58 23.3	.....
Road crossing	41 20 36.6	95 58 56.9	2,566
Road crossing	41 20 55.2	95 59 48.9	4,389
West along highways.			
Fort Omaha Reservation, near southeast gate of; iron post stamped "Prim. Trav. Sta. No. 19"	41 18 24.3	95 57 23.7	.....
Chicago & Northwestern Ry. bridge, center of north face of east concrete pier	41 18 29.1	95 58 14.7	3,920
T road north	41 18 36.9	95 59 15.8	4,737
Crossroads	41 18 36.8	95 59 41.5	1,960

IRVINGTON QUADRANGLE, NEBR.

West along highways. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Omaha, Blondo and Fifty-Eighth streets, T. 15 N., Rs. 12 and 13 E., 20 feet north by 20 feet west of corner of secs. 7, 12, 13, and 18; iron post stamped "Prim. Trav. Sta. No. 1, 1231, 1917"	41 16 39.6	96 00 17.1	.....
T. 15 N., R. 12 E., quarter corner between secs. 12 and 13	41 16 39.3	96 00 51.1	2,597
T. 15 N., R. 12 E., corner of secs. 11, 12, 13, and 14, crossroads	41 16 39.6	96 01 25.4	2,620
Crossing of Chicago & Northwestern Ry	41 16 39.6	96 02 37.2	5,480
T. 15 N., R. 12 E., quarter corner between secs. 10 and 15, crossroads	41 16 39.5	96 03 09.0	2,430
T. 15 N., R. 12 E., 20 feet south by 20 feet east of quarter corner between secs. 9 and 16 at T road south; iron post stamped "Prim. Trav. Sta. No. 2, 1168, 1917"	41 16 39.3	96 03 43.2	2,610
T. 15 N., R. 12 E., corner of secs. 8, 9, 16, and 17, crossroads	41 16 39.3	96 04 52.5	5,290
T. 15 N., R. 12 E., quarter corner between secs. 8 and 9, T road west	41 17 05.6	96 04 52.6	2,659
T. 15 N., R. 12 E., corner of secs. 4, 5, 8, and 9, fence	41 17 31.6	96 04 52.8	2,630
Crossroads	41 17 39.6	96 04 52.7	820
Tps. 15 and 16 N., R. 12 E., corner of secs. 4, 5, 32, and 33, crossroads	41 18 23.4	96 04 52.6	4,427
Tps. 15 and 16 N., R. 12 E., quarter corner between secs. 5 and 32, fence line	41 18 23.2	96 05 27.1	2,640
Tps. 15 and 16 N., R. 12 E., corner of secs. 5, 6, 31, and 32, crossroads	41 18 23.3	96 06 01.9	2,650
Tps. 15 and 16 N., Rs. 11 and 12 E., 25 feet north by 30 feet west of corner of secs. 1, 6, 31, and 36 and crossroads; iron post stamped "Prim. Trav. Sta. No. 3, 1207, 1917"	41 18 23.6	96 07 10.5	5,238
T. 16 N., Rs. 11 and 12 E., 20 feet south and 35 feet west of corner of secs. 13, 18, 19, and 24; iron post stamped "Prim. Trav. Sta. No. 4, 1126, 1917"; azimuth to railroad crossing sign, 93° 07′	41 20 59.8	96 07 11.0	.....
T. 16 N., Rs. 11 and 12 E., corner of secs. 7, 12, 13, and 18, T road east	41 21 52.2	96 07 10.7	5,307

West along highways.

Tps. 15 and 16 N., Rs. 11 and 12 E., a quarter of a mile north of township corner; 20 feet south by 30 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 20, 1251"	41 18 36.6	96 00 15.7	.....
T. 16 N., Rs. 11 and 12 E., 0.25 mile south of corner of secs. 25, 30, 31, and 36, crossroads	41 19 03.0	96 00 16.2	2,675
T. 16 N., R. 11 E., 0.25 mile south of quarter corner between secs. 25 and 36, T road north	41 19 02.8	96 00 50.7	2,646
Debolt Place, crossing of Chicago & Northwestern Ry. at	41 19 27.8	96 00 58.2	2,588
T. 16 N., R. 12 E., 0.25 mile north of corner of secs. 25, 26, 35, and 36, crossroads	41 19 29.0	96 01 25.3	2,073
T. 16 N., R. 12 E., corner of secs. 23, 24, 25, and 26, crossroads	41 20 08.1	96 01 25.3	3,960
T road north	41 20 08.1	96 01 42.4	1,305
T. 16 N., R. 12 E., quarter corner between secs. 23 and 26, crossroads	41 20 08.0	96 01 59.7	1,325
T. 16 N., R. 12 E., corner of secs. 22, 23, 26, and 27, fence line	41 20 08.0	96 02 34.1	2,625
T road south	41 20 08.0	96 03 02.4	2,165
Center of wooden bridge	41 20 08.0	96 03 10.6	634
T. 16 N., R. 12 E., corner of secs. 21, 22, 27, and 28, 30 feet north by 20 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 21, 1233, 1917"	41 20 08.3	96 03 43.4	2,506
Center of wooden bridge	41 20 34.0	96 03 43.1	2,599
T. 16 N., R. 12 E., corner of secs. 15, 16, 21, and 22, crossroads	41 21 00.2	96 03 43.2	2,655
Crossroads	41 21 00.2	96 04 52.0	5,257
Center of steel bridge	41 21 00.2	96 05 23.8	2,428
T. 16 N., R. 12 E., corner of secs. 17, 18, 19, and 20, T road south	41 21 00.2	96 06 00.4	2,790
Center of wooden bridge over Chicago & Northwestern Ry	41 21 00.2	96 06 29.7	2,240

West and north along Chicago & Northwestern Ry.

Briggs, 315 feet west of, 40 feet south by 20 feet east of road crossing near southwest corner of sec. 18, T. 16 N., R. 13 E.; iron post stamped "Prim. Trav. Sta. No. 22, 1129"	41 21 08.4	96 00 16.2	.....
Road crossing	41 22 11.4	96 00 31.6	6,488

IRVINGTON QUADRANGLE, NEBR.—Continued.

South along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 16 N., Rs. 11 and 12 E., corner of secs. 13, 18, 19, and 24, T road west	41 21 00.3	96 00 16.6	.....
Railroad crossing on Chicago & Northwestern Ry	41 20 43.8	96 00 16.5	1,680
T. 16 N., Rs. 12 and 13 E., quarter corner between secs. 19 and 24, T road west	41 20 34.1	96 00 16.5	980
T. 16 N., Rs. 12 and 13 E., corner of secs. 19, 24, 25, and 30, T road west	41 20 08.1	96 00 16.4	2,630
T road east	41 19 55.1	96 00 16.3	1,320
Railroad crossing, Chicago & North Western Ry. overhead bridge	41 19 18.0	96 00 16.2	3,750
T. 16 N., Rs. 12 and 13 E., corner of secs. 25, 30, 31, and 36, fence line	41 19 15.9	96 00 16.2	220
Tps. 15 and 16 N., Rs. 12 and 13 E., corner of secs. 1, 6, 31, and 36, fence line	41 18 23.9	96 00 16.3	.....
T road east	41 18 10.5	96 00 16.4	1,350
T. 15 N., Rs. 12 and 13 E., corner of secs. 1, 6, 7, and 12, T road east	41 17 31.7	96 00 16.6	3,930
T. 15 N., Rs. 12 and 13 E., quarter corner between secs. 7 and 12, crossroads	41 17 05.4	96 00 16.7	2,670

Magnetic declination for quadrangle, 9.8° E.

North along highways near center of quadrangle.

T. 15 N., R. 12 E., quarter corner between secs. 15 and 22, crossroads	41 15 47.3	96 03 08.7	.....
Center of bridge	41 16 19.0	96 03 09.0	3,205
T. 15 N., R. 12 E., quarter corner between secs. 12 and 15, crossroads	41 16 39.5	96 03 09.0	2,075

South along highways near west border of quadrangle.

Tps. 15 and 16 N., Rs. 11 and 12 E., Prim. Trav. Sta. No. 3, previously described	41 18 23.6	96 07 10.5	.....
T. 15 N., Rs. 11 and 12 E., corner of secs. 1, 6, 7 and 12, crossroads	41 17 31.1	96 07 10.2	5,313
T. 15 N., Rs. 11 and 12 E., corner of secs. 7, 12, 13, and 18, crossroads	41 16 38.8	96 07 10.2	5,290
Center of steel bridge	41 16 10.4	96 07 10.2	2,825
T. 15 N., Rs. 11 and 12 E., 30 feet south by 40 feet east of crossroads at corner of secs. 13, 18, 19, and 24; iron post stamped "Prim. Trav. Sta. No. 25, 1121, 1917"	41 15 46.3	96 07 09.8	2,490

North and east along highways. (By Oscar Jones in 1917.)

Tps. 15 and 16 N., R. 12 E., corner of secs. 4, 5, 32, and 33, crossroads	41 18 23.4	96 04 52.6	.....
T. 16 N., R. 12 E., quarter corner between secs. 32 and 33, T road east	41 18 49.6	96 04 52.6	2,652
T. 16 N., R. 12 E., corner of secs. 28, 29, 32, and 33, fence line	41 19 15.9	96 04 52.4	2,655
T. 16 N., R. 12 E., quarter corner between secs. 28 and 33, fence line	41 19 15.8	96 04 17.9	2,640
T. 16 N., R. 12 E., corner of secs. 27, 28, 33, and 34, fence line	41 19 15.9	96 03 43.7	2,612
Crossing of Chicago & Northwestern Ry	41 19 16.0	96 03 29.3	1,105
Road fork	41 19 16.1	96 03 17.6	893
Road fork	41 19 39.7	96 03 48.1	3,329
Prim. Trav. Sta. No. 21 (previously described)	41 20 08.3	96 03 43.5	2,914

Magnetic declination north and east along highways, 9.2° E.

KENNARD QUADRANGLE, NEBR.

Southeast along highways. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Center of east face of concrete bridge	41 29 49.0	96 09 57.2	
Road fork	41 29 40.2	96 10 09.2	1,286
Crossroads, 140 feet west of concrete bridge	41 29 23.7	96 10 28.9	2,283
Tps. 17 and 18 N., R. 11 E., 25 feet south of T road east, corner of secs. 3, 4, 33, and 34; iron post stamped "Prim. Trav. Sta. No. 23, 1189, 1917"	41 28 47.7	96 10 29.0	3,637
T. 17 N., R. 11 E., quarter corner between secs. 3 and 4, crossroads	41 28 22.0	96 10 29.6	2,604
T. 17 N., R. 11 E., center of sec. 3, fence line	41 28 22.0	96 09 54.9	2,639
T. 17 N., R. 11 E., quarter corner between secs. 2 and 3, T road south	41 28 22.1	96 09 20.3	2,635
T. 17 N., R. 11 E., center of sec. 2, T road north	41 28 22.1	96 08 45.5	2,645
Road fork	41 27 55.8	96 08 25.8	3,054
Road fork, opposite signboard painted "Omaha 21 miles"	41 27 20.1	96 08 11.2	3,777
T. 17 N., R. 11 E., in NW. ¼ sec. 13, 900 feet east of Maney schoolhouse at road fork, west side of road; iron post stamped "Prim. Trav. Sta. No. 24, 1334"	41 27 00.6	96 08 00.9	2,127
T. 17 N., R. 11 E., corner of secs. 11, 12, 13, and 14, crossroads	41 27 04.0	96 08 11.0	837
T. 17 N., R. 11 E., corner of secs. 13, 14, 23, and 24, crossroad	41 26 11.6	96 08 11.4	5,305
T. 17 N., R. 11 E., corner of secs. 23, 24, 25, and 26, crossroad	41 25 19.6	96 08 11.6	5,260
T. 17 N., R. 11 E., corner of secs. 25, 26, 35, and 36, crossroad	41 24 27.3	96 08 11.4	5,300
T. 17 N., R. 11 E., corner of secs. 35 and 36, T road north, Douglas-Washington county line	41 23 35.0	96 08 11.3	5,300
T. 16 N., R. 11 E., quarter corner on north side of sec. 1, T road south	41 23 34.8	96 07 45.9	1,939

South along highways.

T. 17 N., R. 11 E., quarter corner between secs. 3 and 4, crossroads	41 28 22.0	96 10 29.6	
Center of bridge	41 27 53.4	96 10 29.7	2,895
T. 17 N., R. 11 E., quarter corner between secs. 9 and 10, fence line	41 27 29.8	96 10 29.8	2,390
T. 17 N., R. 11 E., corner of secs. 9, 10, 15, and 16, crossroads	41 27 03.6	96 10 29.8	2,650
Center of concrete bridge	41 26 41.2	96 10 29.5	2,276
T. 17 N., R. 11 E., corner of secs. 15, 16, 21, and 22, 30 feet north by 20 feet west of crossroads, at Peaceful Hill schoolhouse; iron post stamped "Prim. Trav. Sta. No. 31, 1241, 1917"	41 26 11.9	96 10 30.4	2,966
T. 17 N., R. 11 E., quarter corner between secs. 21 and 22, fence line	41 25 45.4	96 10 30.2	2,685
T. 17 N., R. 11 E., corner of secs. 21, 22, 27, and 28, crossroads	41 25 19.4	96 10 29.8	2,631
T. 17 N., R. 11 E., quarter corner between secs. 22 and 27, fence line	41 24 53.2	96 10 29.8	2,649
T. 17 N., R. 11 E., corner of secs. 27, 28, 33, and 34, crossroads	41 24 27.2	96 10 30.0	2,635
T. 17 N., R. 11 E., quarter corner between secs. 33 and 34, fence line	41 24 01.0	96 10 29.9	2,660
T. 16 N., R. 11 E., 50 feet west by 30 feet south of T road south, corner of secs. 3 and 4; iron post stamped "Prim. Trav. Sta. No. 32, 1130"	41 23 34.6	96 10 40.2	2,787
T. 16 N., R. 11 E., quarter corner between secs. 3 and 4, fence line	41 23 34.9	96 09 55.3	3,423
T. 16 N., R. 11 E., corner of secs. 1 and 2, T road south	41 23 34.8	96 09 30.0	1,925
T. 17 N., R. 11 E., corner of secs. 35 and 36, T road north	41 23 34.9	96 09 20.4	732

West and south along highways.

T. 17 N., R. 11 E., quarter corner between secs. 3 and 4	41 28 22.0	96 10 29.6	
T. 17 N., R. 11 E., in sec. 4, T road south	41 28 22.2	96 11 04.3	2,645
Center of steel bridge	41 28 22.4	96 11 51.8	3,615
Kennard, on Chicago & Northwestern Ry., opposite semaphore, center of track	41 28 20.2	96 12 03.4	927
T. 17 N., R. 11 E., quarter corner between secs. 5 and 6, T road north	41 28 22.2	96 12 48.1	3,400
T. 17 N., Rs. 10 and 11 E., quarter corner between secs. 1 and 6, west side of road, at T road east; iron post stamped "Prim. Trav. Sta. No. 27, 1180, 1917"	41 28 22.2	96 13 58.0	5,318
T. 17 N., Rs. 10 and 11 E., corner of secs. 1, 6, 7, and 12, crossroads	41 27 56.2	96 13 57.6	2,640
T. 17 N., Rs. 10 and 11 E., quarter corner between secs. 7 and 12, T road east	41 27 30.0	96 13 57.7	2,646
T. 17 N., Rs. 10 and 11 E., quarter corner between secs. 13 and 18, T road east	41 26 37.8	96 13 58.0	
T. 17 N., Rs. 10 and 11 E., 25 feet north by 30 feet east of crossroads, corner of secs. 13, 18, 19, and 24; iron post stamped "Prim. Trav. Sta. No. 26"	41 26 11.8	96 13 57.6	2,628
T. 17 N., Rs. 10 and 11 E., corner of secs. 19, 24, 25, and 30, T road east	41 25 19.3	96 13 58.0	5,318
T. 17 N., Rs. 10 and 11 E., quarter corner between secs. 25 and 30, crossroads	41 24 53.2	96 13 58.0	2,640
T. 17 N., Rs. 10 and 11 E., corner of secs. 25, 30, 31, and 36, crossroads	41 24 27.1	96 13 57.9	2,647
Center of wooden bridge	41 23 54.5	96 13 57.8	3,300
T. 17 N., Rs. 10 and 11 E., corner of secs. 31 and 36, T road north	41 23 34.9	96 13 57.9	1,980
Crossing of Chicago & Northwestern Ry	41 23 34.8	96 13 35.8	1,678
T. 16 N., R. 11 E., corner of secs. 5 and 6, T road south	41 23 34.8	96 12 58.7	2,827
T. 17 N., R. 11 E., corner of secs. 31 and 32, T road north	41 23 34.8	96 12 44.5	1,083
T. 16 N., R. 11 E., corner of secs. 4 and 5, T road south	41 23 34.7	96 11 49.1	4,226

KENNARD QUADRANGLE, NEBR.—Continued.

East along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossing of Chicago & Northwestern Ry	41 23 34.7	96 14 22.9	.....
T. 16 N., R. 11 E., corner of secs. 4, 5, 8, and 9, crossroads	41 22 43.9	96 11 49.2	.....
Tps. 16 and 17 N., R. 11 E., corner of secs. 4, 5, 32, and 33	41 23 34.7	96 11 49.1	5,151
T. 16 N., Rs. 10 and 11 E., 20 feet south by 35 feet west of T road south at north corner of secs. 1 and 6; iron post stamped "Prim. Trav. Sta. No. 30, 1917"	41 23 34.7	96 14 03.6	1,470
T. 17 N., Rs. 10 and 11 E., corner of secs. 31 and 36, T road north	41 23 34.9	96 13 57.9	435

Magnetic declination for the quadrangle, 8.8° E.

RALSTON QUADRANGLE, NEBR.

North near west border and east near north border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Millard, railroad crossing (Union Pacific R. R.)	41 12 35.1	96 07 25.5	.....
T. 14 N., R. 11 E., quarter corner between secs. 1 and 6, crossroads	41 12 43.7	96 07 10.1	1,463
Tps. 14 and 15 N., Rs. 11 and 12 E., corner of secs. 1, 6, 31, and 36, 25 feet east of crossroads at section line fence; iron post stamped "Prim. Trav. Sta. No. 38, 1160, 1917"	41 13 09.8	96 07 09.9	2,647
T. 15 N., Rs. 11 and 12 E., corner of secs. 25, 30, 31, and 36, crossroads	41 14 02.1	96 01 10.2	5,285
T. 15 N., R. 12 E., corner of secs. 29, 30, 31, and 32, T roads south	41 14 02.2	96 06 02.4	5,175
T. 15 N., R. 12 E., quarter corner between secs. 29 and 32, T road north	41 14 02.3	96 05 27.8	2,645
T. 15 N., R. 12 E., corner of secs. 28, 29, 32, and 33, T road south	41 14 02.4	96 04 53.1	2,652
T road south on section line	41 13 59.5	96 03 43.7	5,302
T. 15 N., R. 12 E., quarter corner between secs. 27 and 34, 35 feet north by 30 feet west of T road north; iron post stamped "Prim. Trav. Sta. No. 39, 1021, 1917"	41 14 02.7	96 03 09.4	2,639
T. 15 N., R. 12 E., quarter corner between secs. 22 and 27, crossroads	41 14 54.8	96 03 08.8	5,273

South near west border of quadrangle.

T. 15 N., Rs. 11 and 12 E., corner of secs. 19, 24, 25, and 30, crossroads	41 14 54.4	96 07 10.4	.....
T. 15 N., Rs. 11 and 12 E., corner of secs. 25, 30, 31, and 36	41 14 02.1	96 07 10.2	5,295

Magnetic declination for north edge of quadrangle, 9.3° E.

WATERLOO QUADRANGLE, NEBR.

South and east along highways near east border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road west, at Elk City, opposite brick school	41 22 17.3	96 16 04.8	.....
T. 16 N., R. 10 E., T road east, 0.25 mile east of corner of secs. 10, 11, 14, and 15	41 21 51.2	96 16 04.8	2,640
T. 16, N., R. 10 E., 0.25 mile east of corner of secs. 14, 15, 22, and 23, road east	41 20 58.9	96 16 05.0	5,292
T. 16 N., R. 10 E., 75 feet north of T road west; iron post stamped "Prim. Trav. Sta. No. 33"	41 20 07.5	96 16 31.0	5,575
Center of wooden bridge	41 19 11.0	96 16 26.7	5,730
Center of wooden bridge	41 18 26.4	96 16 24.0	4,513
Waterloo, 1 mile northeast of, at road fork north, south side of road; iron post stamped "Prim. Trav. Sta. No. 34, 1121"	41 17 40.5	96 16 37.0	4,757
Center of concrete bridge	41 17 40.9	96 15 51.5	3,465
Road fork	41 17 34.9	96 15 14.1	2,922
Road fork	41 17 30.3	96 15 00.0	1,172
T. 16 N., R. 10 E., 0.25 mile east of corner of secs. 14, 15, 22, and 23	41 20 58.9	96 16 05.0	.....
T. 16 N., R. 10 E., corner of secs. 13, 14, 23, and 24, crossroads	41 20 59.0	96 15 13.5	3,930

Magnetic declination for east border of quadrangle, 9.4° E.

FLORENCE QUADRANGLE, IOWA.

West along highways. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Council Bluffs, center of Broadway and Twenty-eighth streets	41 15 42.7	95 53 20.3	.....
Council Bluffs, north side of Broadway, at angle of street, first post on Missouri River approach: iron street lamp-post	41 15 42.6	95 54 34.9	5,697
Council Bluffs, south abutment of bridge over Missouri river	41 15 33.2	95 55 03.2	2,362
Council Bluffs, east end of steel truss	41 15 31.5	95 55 17.8	1,125
At Council Bluffs.			
Council Bluffs, east abutment of Illinois Central R. R. bridge	41 16 35.2	95 53 21.8	.....
Council Bluffs, road crossing	41 16 32.2	95 52 45.7	2,772

HONEY CREEK QUADRANGLE, IOWA.

In Council Bluffs on Illinois Central R. R. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations
	° ′ ″	° ′ ″	*Feet.*
Council Bluffs, road crossing	41 16 04.5	95 52 14.6	.....
Council Bluffs, center of Broadway crossing	41 15 42.5	95 52 14.0	2,235

Magnetic declination for Council Bluffs, about 9° E.

In Council Bluffs.

Council Bluffs, center of Sixteenth Street and Fifth Avenue	41 15 25.1	95 52 02.8	.....
Council Bluffs, center of Sixteenth Street and Broadway	41 15 42.3	95 52 02.8	1,749

OMAHA AND VICINITY QUADRANGLE, IOWA.

Along streets in Council Bluffs. (By Oscar Jones in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Bluff triangulation station, (Mo. R. Comm.) Report of Chief of Engineers, 1891, part 6, p. 3781, corrected to North American datum	41 14 34.44	95 50 33.93	
Council Bluffs, at Sixteenth Avenue and High Street, center of sewer manhole	41 14 47.4	95 50 47.8	1,683
Council Bluffs, at Sixteenth Avenue and Tenth Street, at turn of car line	41 14 47.6	95 51 31.9	3,365
Council Bluffs, Sixteenth Avenue and Sixteenth Street, center	41 14 47.9	95 52 03.2	2,389

Magnetic declination for Council Bluffs, about 9° E.

OKLAHOMA.

PRIMARY TRAVERSE.

Agra, Belford, Claremore, Foraker, Gray Horse, Hominy, Kaw, Mallon, Newkirk, Nowata, Pawhuska, Prague, Sac and Fox, Skedee, and Yale quadrangles.

CREEK, KAY, OSAGE, PAYNE, LINCOLN, OKFUSKEE, PAWNEE, AND TULSA COUNTIES.

The following geographic positions, on North American datum, were determined by primary traverse in 1916 by B. H. Yoakum and W. F. Hicks and are based on U. S. Geological Survey triangulation stations, Cox, Cushing, Flint, and Phanton, and primary traverse positions determined in 1914.

The work in most of Claremore, Pawhuska and the northern part of Hominy quadrangles was done by Hicks; that in the other quadrangles named above and in part of Hominy quadrangle was done by Yoakum.

For other positions in Oklahoma see U. S. Geological Survey Bulletins 122, 175, 310, 440, and 644, and U. S. Coast and Geodetic Survey Report for 1903.

AGRA QUADRANGLE.

Along highways in the northeast corner of quadrangle. (By B. H. Yoakum in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 17 N., R. 5 E., corner of secs. 3, 4, 9, and 10, 1 mile southeast of Cushing, crossroads; iron pipe	35 58 16.0	96 46 02.7	5,363
T. 17 N., R. 5 E., approximate corner of secs. 4, 5, 8, and 9, 1.5 miles southwest of Cushing post office, crossroads	35 58 16.0	96 47 05.4	5,149
Cushing triangulation station, about 1 mile southwest of the town of Cushing and 1,000 feet south of corner of secs. 4, 5, 8, and 9, T. 17 N., R. 5 E.; the station is on wagon road right of way about 3 feet from west fence. Station mark: A bronze triangulation tablet cemented in stone set flush with ground	35 58 01.2	96 47 05.2	1,490

Magnetic declination for the extreme northeast corner of quadrangle, 9° 18′ E.

BELFORD QUADRANGLE.

South along highways near west border of quadrangle. (By B. H. Yoakum in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 24 N., R. 3 E., corner of secs. 20, 21, 28, and 29, in southwest corner of crossroads, 6 feet west of J. W. Brasier's mail box; iron post stamped "Prim. Trav. Sta. No. 24, 1916"	36 32 08.1	96 59 47.7	
T. 24 N., R. 3 E., quarter corner between secs. 32 and 33, center of north-south road at east-west fence line	36 30 51.5	96 59 47.4	7,740
Tps. 23 and 24 N., R. 3 E., corner of secs. 4, 5, 32, and 33, T road east; iron stake	36 30 25.4	96 59 45.9	2,643

Magnetic declination for west border of quadrangle, 10° 30′ E.

East along highways near south border of quadrangle.

Tps. 23 and 24 N., R. 3 E., quarter corner between secs. 4, and 33, at north and south fence line; iron stake	36 30 25.5	96 59 15.0	2,525
Tps. 23 and 24 N., R. 3 E., corner of secs. 3, 4, 33, and 34, 80 feet east of crossroads; stone	36 30 25.5	96 58 42.7	2,635
Tps. 23 and 24 N., R. 3 E., corners of secs. 2, 3, 34, and 35, T road south	36 30 25.4	96 57 38.1	5,275
Tps. 23 and 24 N., R. 3 E., quarter corner between secs. 2 and 35; iron stake	36 30 25.6	96 57 05.7	2,640
Tps. 23 and 24 N., R. 3 E., corner of secs. 1, 2, 35, and 36, at crossroads; iron stake	36 30 25.7	96 56 33.4	2,640
Tps. 23 and 24 N., R. 3 E., quarter corner between secs. 1 and 36, T road north; iron stake	36 30 25.6	96 56 01.0	2,640
Tps. 23 and 24 N., Rs. 3 and 4 E., corner of secs. 1, 6, 31, and 36, center of east-west road, 20 feet east of fence line south; General Land Office; iron post	36 30 25.6	96 55 28.7	2,640
Tps. 23 and 24 N., R. 4 E., corner of secs. 5, 6, 31, and 32, at north and south fence line; General Land Office iron post with cap missing	36 30 25.7	96 54 23.9	5,289
Tps. 23 and 24 N., R. 4 E., quarter corner between secs. 5, and 32, center of east-west road in line with road south; General Land Office stake with cap missing	36 30 25.7	96 53 51.7	2,630
Tps. 23 and 24 N., R. 4 E., corner of secs. 4, 5, 32, and 33, at T road south; General Land Office stake with cap missing	36 30 25.8	96 53 19.3	2,640
Tps. 23 and 24 N., R. 4 E., quarter corner between secs. 4 and 33, at T road north; General Land Office stake with cap missing	36 30 25.9	96 52 33.8	3,717
T. 24 N., R. 4 E., corner of secs. 3, 4, 33, and 34, in northeast corner of crossroads at Belford schoolhouse, district 42; iron post stamped "Prim. Trav. Sta. No. 25, 1916"	36 30 26.1	96 52 14.5	1,578
Tps. 23 and 24 N., R. 4 E., quarter corner between secs. 3 and 34	36 30 25.9	96 51 42.6	2,600
Tps. 23 and 24 N., R. 4 E., corner of secs. 2, 3, 34, and 35, 0.4 mile west of Belford, center of east-west road at T road north	36 30 25.9	96 51 10.4	2,626
Center of east end of bridge over the east pier of wagon bridge over Arkansas River, about 1.2 miles east of Belford, formerly Belford, P. O	36 30 26.0	96 50 27.7	3,490
Tps. 23 and 24 N., R. 2 E., corner of secs. 1, 2, 35, and 36, at crossroads; stone corner	36 30 26.0	96 50 05.9	1,777
Tps. 23 and 24 N., R. 4 E., quarter corner between secs. 1 and 36, at north and south fence line; stone	36 30 26.0	96 49 33.6	2,640
Tps. 23 and 24 N., Rs. 4 and 5 E., corner of secs. 1, 6, 31, and 36, at T road north; stone	36 30 26.2	96 49 01.2	2,642
Tps. 23 and 24 N., R., 5 E., corner of secs. 5, 6, 31, and 32, at crossroads; stone	36 30 25.9	96 47 58.5	5,124
Tps. 23 and 24 N., R. 5 E., quarter corner between secs. 5 and 32, at north-south fence line; stone	36 30 25.8	96 47 26.3	2,629
Tps. 23 and 24 N., R. 5 E., approximate corner of secs. 4, 5, 32, and 33, center of east and west road at T road south, 75 feet east of T road north	36 30 25.6	96 46 54.1	2,627
Tps. 23 and 24 N., R. 5 E., quarter corner between secs. 4 and 33, at north and south fence line	36 30 25.5	96 46 21.9	2,624
Tps. 23 and 24 N., R. 5 E., corner of secs. 3, 4, 33, and 34, at crossroads; stone	36 30 25.4	96 45 49.7	2,629
Tps. 23 and 24 N., R. 5 E., sixteenth corner 1,326 feet east of corner of secs. 3, 4, 33, and 34; stone	36 30 25.4	96 45 33.5	1,326

Magnetic declination for south border of quadrangle, 10° 01′ E.

BELFORD QUADRANGLE—Continued.

West along highways through center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 25 N., R. 5 E., quarter corner between secs. 15 and 22; iron stake with cap	36 38 13.2	96 45 11.5	.....
T. 25 N., R. 5 E., corner of secs. 15, 16, 21, and 22, north-south fence line; iron stake with cap	36 38 13.4	96 45 43.8	2,637
T. 25 N., R. 5 E., corner of secs. 16, 17, 20, and 21, fence line south; iron stake with cap	36 38 13.2	96 46 47.8	5,219
T. 25 N., R. 5 E., corner of secs. 17, 18, 19, and 20, about 50 feet southwest of gate, in line with fence west, at north-south road; iron stake with cap	36 38 13.6	96 47 52.6	5,285
T. 25 N., Rs. 4 and 5 E., corner of secs. 13, 18, 19, and 24, 100 feet west of Middle Fork of Dogg Creek, 60 feet southwest of fence corner; iron stake	36 38 13.9	96 48 56.8	5,226
T. 25 N., R. 4 E., quarter corner between secs. 13 and 24; iron stake with cap	36 38 14.0	96 49 29.1	2,641
T. 25 N., R. 4 E., corner of secs. 13, 14, 23, and 24, fence line south; iron stake with cap	36 38 13.9	96 50 01.4	2,635
T. 25N., R. 4 E., quarter corner between secs. 14 and 23, east and west fence line, at foot of brace on fence post; iron stake with cap	36 38 14.0	96 50 33.8	2,640
T. 25 N., R. 4 E., corner of secs. 14, 15, 22, and 23, corner of fence line east and south; iron stake with cap	36 38 14.2	96 51 06.3	2,644
T. 25 N., R. 4 E., quarter corner between secs. 15 and 22, iron stake with cap	36 38 14.1	96 51 38.6	2,640
T. 25 N., R. 4 E., corner of secs. 15, 16, 21, and 22, 700 feet northwest of high ridge, 200 feet west of small stream flowing south, at public land survey iron stake with cap; iron post stamped "Prim. Trav. Sta. No. 26, 1916"	36 38 14.1	96 52 11.0	2,642
T. 25 N., R. 4 E., quarter corner between secs. 16 and 21; iron stake with cap	36 38 14.4	96 52 43.1	2,618
T. 25 N., R. 4 E., corner of secs. 16, 17, 20, and 21, on east bank of Drurn Creek, west side of road at T road east; iron stake with cap.	36 38 13.8	96 53 15.3	2,621
T. 25 N., R. 4 E., corner of secs. 17, 18, 19, and 20; iron stake with cap	36 38 13.7	96 54 19.4	5,226
T. 25 N., R. 4 E., quarter corner between secs. 18 and 19; T road south; iron stake with cap	36 38 13.7	96 54 51.7	2,635
T. 25 N., Rs. 3 and 4 E., corner of secs. 13, 18, 19, and 24; iron stake with cap	36 38 13.7	96 55 24.1	2,640
T. 25 N., R. 3 E., quarter corner between secs. 13 and 24, center of east-west road; iron stake with cap	36 38 13.7	96 55 56.5	2,644
T. 25 N., R. 3 E., corner of secs. 13, 14, 23, and 24, center of cross-roads	36 38 13.8	97 56 29.0	2,653
T. 25 N., R. 3 E., quarter corner between secs. 14 and 23; iron stake with cap	36 38 13.9	96 57 01.2	2,622
T. 25 N., R. 3 E., corner of secs. 14, 15, 22, and 23; iron stake with cap	36 38 14.1	96 57 33.5	2,637
T. 25 N., R. 3 E., quarter corner between secs. 15 and 22; iron stake with cap	36 38 13.7	96 58 05.8	2,630
T. 25 N., R. 3 E., corner of secs. 15, 16, 21, and 22; iron stake with cap	36 38 13.9	96 58 38.2	2,642
Prim. Trav. Sta. No. 23, 1916	36 37 47.85	97 00 15.36	8,347

Magnetic declination through center of quadrangle (east-west), 10° 13′ E.

Along highways and Atchison, Topeka & Santa Fe Ry.

T. 26 N., R. 5 E., quarter corner between secs. 9 and 10; iron stake with cap	36 44 44.2	96 45 41.4	.....
Kaw, 5 miles southeast of, about 1,100 feet southeast of milepost 22, on railroad, 25 feet south by 145 feet east of east-west road crossing, near fence line; iron post stamped "Prim. Trav. Sta. No. 1, 1916," elevation 1,029 feet	36 44 17.9	96 45 23.8	3,020

CLAREMORE QUADRANGLE.

North along public roads near southwest corner of quadrangle. (By B. H. Yoakum in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 18 N., R. 12 E., corner of secs. 25, 26, 35, and 36, center of cross-roads at Poog schoolhouse	36 00 10.6	95 59 36.7	.....
T. 18 N., R. 12 E., corner of secs. 13, 14, 23, and 24, crossroads	36 01 55.1	95 59 36.5	10,570
T. 18 N., R. 12 E., corner of secs. 11, 12, 13, and 14, crossroads	36 02 47.6	95 59 36.5	5,305
T. 18 N., R. 12 E., corner of secs. 1, 2, 11, and 12, T road west, second class road north	36 03 39.8	95 59 36.5	5,280

From Tulsa north via highways and Midland Valley R. R. to Sperry.

NOTE.—An error of about 2.4″ in latitude and 1.6″ in longitude exists between Tulsa and Sperry.			
Tulsa, 323 feet north of intersection of "Frisco" Ry. and First Street, south side of First Street; top of curbing painted "675"	36 09 10.7	95 59 54.1	.....
T. 20 N., R. 12 E., corner of secs. 25, 26, 35, and 36, crossroads	36 10 37.0	95 59 35.8	.....

Along public roads near southwest corner of quadrangle.

T. 20 N., R. 12 E., 0.3 mile west of northeast corner of sec. 24, east side of Midland Valley R. R. and south side of wagon road; iron post stamped "Prim. Trav. Sta. No. 48, 1916"	36 12 21.4	95 58 45.2	11,346
T. 20 N., Rs. 12 and 13 E., 0.25 mile west of corner of secs. 1, 6, 7, and 12, road crossing of Midland Valley R. R	36 14 03.4	95 58 46.7	10,315
T. 20 N., R. 12 E., corner of secs. 1, 2, 11, and 12, crossroads	36 14 03.2	95 59 34.4	3,910
T. 20 N., Rs. 12 and 13 E., north corner of secs. 1 and 6; iron post stamped "Prim. Trav. Sta. No. 50, 1916. Elev. 627"	36 14 55.6	95 58 29.7	.....
T. 21 N., R. 12 E., 0.25 mile west of northeast corner of sec. 36, at railroad crossing on section line, on east side of railroad and south side of wagon road; iron post stamped "Prim. Trav. Sta. No. 51, 1916. Elev. 621 Okla."	36 15 47.6	95 58 34.1	5,262

Along public roads near southwest corner of quadrangle.

The following adjusted positions are on a circuit which closes satisfactorily.

Sperry, 1.25 miles southeast of, road crossing of Midland Valley R. R.	36 16 42.5	95 59 00.1	5,666
T. 21 N., R. 12 E., corner of secs. 23, 24, 25, and 26, T road north	36 16 42.4	95 59 20.7	1,690

Position by F. W. Hicks.

Sperry, Main Street crossing of Midland Valley R. R	36 17 47.5	95 59 29.1	6,986

From Sperry north to northwest corner of quadrangle.

Crossroads	36 18 26.5	95 59 29.4	3,950
Sperry, 1.25 miles north of, south end of bridge over Hominy Creek; top of nut on east cylinder pier	36 18 55.5	95 59 29.4	2,927
Crossroads	36 19 50.9	95 59 28.6	5,603
Small bridge	36 20 26.5	95 59 28.5	3,600
Crossroads	36 21 03.7	95 59 28.6	3,760
T road south	36 21 55.9	95 59 28.5	5,274
Bird Creek, center of bridge, under name plate	36 23 43.1	95 59 28.4	10,840
Crossroads	36 24 32.6	95 59 28.8	5,010
Corner fence post at T fence west	36 25 42.7	95 59 05.0	7,351
Road corner, roads south and east, at section corner	36 26 16.8	95 59 04.7	3,453
Swinging gate	36 26 36.3	95 58 56.6	2,076
Road crossing under double telephone line	36 27 35.0	95 59 28.6	6,491
Rock cairn on bare ridge, east side of double telephone line	36 28 09.0	95 59 28.6	3,440
Road crossing at double telephone line	36 28 44.5	95 59 28.8	3,590

Magnetic declination for northwest quarter of quadrangle, 9° 15′ E.; for southwest quarter of quadrangle, 9° E.

FORAKER QUADRANGLE.

West along highways in northwest corner of quadrangle. (By B. H. Yoakum in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 29 N., R. 5 E., closing corner on north side of secs. 14 and 15; iron stake with cap	36 59 56.2	96 44 28.3	2,605
T road north	36 59 56.2	96 44 11.6	1,355
T. 29 N., R. 5 E., closing corner on north side of secs. 13 and 14; iron stake with cap	36 59 56.3	96 43 22.6	3,973

West along highways near west border of quadrangle.

T. 28 N., R. 5 E., corner of secs. 25, 26, 35, and 36	36 52 07.9	96 43 30.2	.....
T. 28 N., R. 5 E., quarter corner between secs. 26 and 35; iron stake with cap	36 52 08.0	96 44 02.8	2,646

Magnetic declination along north border in northwest corner of quadrangle, 10° 10′ E.

West along highways near south border of quadrangle.

Tps. 26 and 27 N., Rs. 5 and 6 E.; General Land Office iron post	36 46 02.2	96 42 26.8	.....
Tps. 26 and 27 N., R. 5 E., corner of secs. 1, 2, 35, and 36, fence line north from corner; no stake	36 46 02.5	96 43 31.6	5,274
Tps. 26 and 27 N., R. 5 E., quarter corner between secs. 2 and 35; iron stake with cap	36 46 02.3	96 44 03.8	2,623
Tps. 26 and 27 N., R. 5 E., corner of secs. 2, 3, 34, and 35; iron stake with cap	36 46 02.4	96 44 36.3	2,642

GRAY HORSE QUADRANGLE.

North along highways and Atchison, Topeka & Santa Fe Ry. near west border of quadrangle. (By B. H. Yoakum in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 26 N., R. 5 E., about 360 feet north of corner of secs. 14, 15, 22, and 23, 0.40 mile southeast of milepost 23 on railroad, north and south road crossing	36 43 29.4	96 44 37.0	.....
Burbank, 1.20 miles northwest of, north end of trestle painted "B-24"	36 42 54.2	96 43 41.3	5,765
Burbank, 150 feet southeast of station, 100 feet east of crossing, on north side of road; iron post stamped "Prim. Trav. Sta. No. 2, 1916." Elevation 935 feet	36 41 53.6	96 43 30.2	6,192
Burbank, 1.25 miles south of, opposite milepost 27, at south end of tangent, center of track	36 40 51.2	96 43 07.7	6,573
Burbank, 2.25 miles south of, opposite milepost 28, center of track	36 40 03.8	96 42 42.4	5,215
T. 25 N., Rs. 5 and 6 E., corner of secs. 1, 6, 7, and 12, at corner of fence line in field, about halfway between railroad and Salt Creek at bend in creek; iron stake with cap	36 39 57.1	96 42 29.2	1,273
Remington station, 1.16 miles north of, 55 feet south of trestle "28-A" (marked U. S. 899) on west side of track, milepost 29	36 39 19.8	96 43 12.0	5,143
Remington station, opposite center of, center of track	36 38 24.2	96 42 42.2	6,122
Remington station, 0.25 mile southwest of road crossing	36 38 15.2	96 42 30.7	1,311
Remington station, 0.75 mile southeast of, 200 feet east of milepost 31, on north side of railroad, in a 3-foot rock; aluminum tablet stamped "Prim. Trav. Sta. No. 3, 1916." Elevation 881 feet	36 38 02.9	96 42 02.0	2,646
Remington station, 1.6 miles south of, 120 feet south of railroad bridge 31-C, road crossing	36 37 19.0	96 41 54.4	4,474
Remington station, 2.65 miles south of, opposite milepost 33, center of track	36 36 26.0	96 42 07.4	5,466
Remington station, 3.65 miles south of, 88 feet S. 78° 15′ E. to milepost 34, 3 feet from fence line, on west side of track; iron post stamped "Prim. Trav. Sta. No. 4, 1916." Elevation 851 feet	36 36 01.6	96 43 03.3	5,185
Fairfax, 2.27 miles north of, opposite milepost 35, marked "U. S. 854," center of track	36 35 32.9	96 43 55.8	5,177
Fairfax, 1.6 miles north of, opposite milepost 36, center of track	36 34 57.7	96 43 53.3	3,558
Fairfax, 0.60 mile north of, opposite milepost 37, center of track	36 34 43.6	96 42 52.4	5,164
Fairfax, 15 feet south of station, in angle of brick platform; iron post stamped "Prim. Trav. Sta. No. 5, 1916." Elevation 843 feet.	36 34 32.3	96 42 15.0	3,264
Fairfax, 1.3 miles south of, opposite milepost 39, marked "U. S. 814," center of track	36 33 25.1	96 42 14.3	6,795

GRAY HORSE QUADRANGLE—Continued.

North along highways and Atchison, Topeka & Santa Fe Ry. near west border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 24 N., Rs. 5 and 6 E., corner of secs. 13, 18, 19, and 24	36 33 01.2	96 42 36.3	3,015
Fairfax, 2.3 miles southwest of, opposite milepost 40, marked "U. S. 807," center of track	36 32 34.6	96 42 31.0	2,713
Fairfax, 2.5 miles southwest of, 900 feet south of stone milepost 40, 250 feet south of east and west road crossing at trestle "40–A," 65 feet west of track, 25 feet east of wire fence, on bank; iron post stamped "Prim. Trav. Sta. No. 6, 1916." Elevation 819 feet	36 32 27.4	96 42 37.6	909
Fairfax, 3.80 miles southwest of, west end of bridge "41–A" over Arkansas River	36 31 51.0	96 43 49.6	6,933
Ralston, 1.13 miles northwest of, opposite milepost 42, marked "U. S. 807," center of track	36 31 27.2	96 43 58.5	2,510
Ralston, 193 feet southwest of station, 48 feet south of southwest corner of scale house, 3 feet east of wire fence line; iron post stamped "Prim. Trav. Sta. No. 7, 1916"	36 30 28.1	96 43 59.7	5,978

East along highways near south border of quadrangle.

Ralston, 0.62 mile east of, south end of wagon bridge over Arkansas River	36 30 07.5	96 43 28.9	3,268
Tps. 23 and 24 N., Rs. 5 and 6 E., corner of secs. 1, 6, 31, and 36, in center of east and west road; General Land Office iron post	36 30 25.0	96 42 36.6	4,622
Tps. 23 and 24 N., R. 6 E., corner of secs. 5, 6, 31, and 32; crossroads	36 30 25.4	96 41 33.9	5,119
Tps. 23 and 24 N., R. 6 E., corner of secs. 4, 5, 32, and 33; iron post with cap	36 30 25.7	96 40 28.2	5,361
Tps. 23 and 24 N., R. 6 E., quarter corner between secs. 4 and 33; iron stake with cap	36 30 25.8	96 39 55.8	2,648
Tps. 23 and 24 N., R. 6 E., corner of secs. 3, 4, 33 and 34; iron stake with cap	36 30 25.9	96 39 23.2	2,660
Tps. 23 and 24 N., R. 6 E., quarter corner between secs. 3 and 34; iron stake with cap	36 30 25.7	96 38 50.8	2,636
Tps. 23 and 24 N., R. 6 E., corner of secs. 2, 3, 34, and 35; iron stake with cap	36 30 25.3	96 38 18.5	2,644
T. 23 N., R. 6 E., 22 feet south by 30 feet east of corner of secs. 1, 2, 35, and 36; iron post stamped "Prim. Trav. Sta. No. 8, 1916"	36 30 26.0	96 37 13.6	5,295
Tps. 23 and 24 N., R. 6 E., quarter corner between secs. 1 and 36; iron stake with cap	36 30 26.5	96 36 41.6	2,606
Tps. 23 and 24 N., Rs. 6 and 7 E., corner of secs. 1, 6, 31, and 36; General Land Office iron post	36 30 26.9	96 36 09.4	2,635
Tps. 23 and 24 N., R. 7 E., corner of secs. 5, 6, 31, and 32; iron stake with cap	36 30 26.3	96 35 09.9	4,852
Tps. 23 and 24 N., R. 7 E., quarter corner between secs. 3 and 34; iron stake with cap	36 30 25.7	96 32 28.3	13,190
Tps. 23 and 24 N., R. 7 E., corner of secs. 2, 3, 34, and 35; iron stake with cap	36 30 25.6	96 31 56.0	2,642
Tps. 23 and 24 N., R. 7 E., quarter corner between secs. 2 and 35; iron stake with cap	36 30 25.9	96 31 23.6	2,642
Tps. 23 and 24 N., R. 7 E., corner of secs. 1, 2, 35, and 36; iron stake with cap	36 30 25.1	96 30 51.2	2,638
Tps. 23 and 24 N., R. 7 E., 1,110 feet east of quarter corner between secs. 1, and 36 on west side of road, 15 feet west of "black-jack" tree, on township line; iron post stamped "Prim. Trav. Sta. No. 9, 1916"	36 30 24.8	96 30 05.4	3,745

North along highways near east border of quardangle.

T. 24 N., R. 7 E., west side of sec. 24, on west bank of Hominy Creek, 100 feet north of sharp bend in creek to west, 10 feet north of blazed white-oak tree marked "U. S. G. S. Prim. Trav. Line"	36 32 26.1	96 30 47.1	12,735
T. 24 N., R. 7 E., quarter corner between secs. 23 and 24 at fence corner; iron stake with cap	36 32 34.7	96 30 52.1	956
T. 24 N., R. 7 E., quarter corner between secs. 13 and 14; iron stake	36 33 26.2	96 30 52.5	5,207
T. 24 N., R. 7 E., corner of secs. 11, 12, 13, and 14; iron stake with cap	36 33 52.1	96 30 52.7	2,624
T. 24 N., R. 7 E., corner of secs. 1, 2, 11, and 12; iron stake with cap	36 34 44.1	96 30 52.9	5,258
T. 24 N., R. 7 E., quarter corner between secs. 1 and 2; iron stake with cap	36 35 10.2	96 30 53.0	2,642
T. 24 N., R. 7 E., north side of secs. 1 and 2, correction corner; iron stake with cap	36 35 36.1	96 30 53.0	2,616
T. 25 N., R. 7 E., corner of secs. 25, 26, 35, and 36; iron stake with cap	36 36 28.9	96 30 40.1	5,445
T. 25 N., R. 7 E., quarter corner between secs. 25 and 26; iron stake with cap	36 36 55.3	96 30 39.4	2,671

GRAY HORSE QUADRANGLE—Continued.

North along highways near east border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 25 N., R. 7 E., corner of secs. 23, 24, 25, and 26; iron stake with cap	36 37 21.5	96 30 39.1	2,645
T. 25 N., R. 7 E., quarter corner between secs. 23 and 24	36 37 45.8	96 30 36.5	2,472
T. 26 N., R. 7 E., quarter corner between secs. 13 and 24; iron stake with cap	36 43 26.9	96 30 04.0	.....
T. 26 N., R. 7 E., corner of secs. 13, 14, 23, and 24; iron stake with cap	36 43 26.5	96 30 36.3	2,631
T. 26 N., R. 7 E., quarter corner between secs. 14 and 23; iron stake with cap	36 43 26.8	96 31 09.1	2,670
T. 26 N., R. 7 E., corner of secs. 14, 15, 22, and 23; iron stake with cap	36 43 27.0	96 31 41.4	2,629
T. 26 N., R. 7 E., corner of secs. 15, 16, 21, and 22; iron stake with cap	36 43 27.8	96 32 46.4	5,292
Flint triangulation station, on highest point on long range of prairie hills locally known as the Flint Hills. Road running west from Pawhuska into the Kaw Reservation passes about 1 mile south of station at point where it crosses the Flint Hills (about 14 miles from Pawhuska). Station mark: A stone post, 25 by 7 by 7 inches, with copper bolt marked "U. S. G. S." sunk in center of top	36 44 05.85	96 33 17.45	4,612

West along highways through center of quadrangle.

T. 25 N., R. 7 E., corner of secs. 15, 16, 21 and 22; iron stake with cap	36 38 12.0	96 32 48.4	.....
T. 25 N., R. 7 E., quarter corner between secs. 16 and 21; iron stake with cap	36 38 12.4	96 33 20.6	2,625
T. 25 N., R. 7 E., corner of secs. 16, 17, 20, and 21; iron stake with cap	36 38 12.9	96 33 52.9	2,628
T. 25 N., R. 7 E., corner of secs. 17, 18, 19, and 20; iron stake with cap	36 38 13.4	96 34 58.0	5,308
T. 25 N., R. 7 E., quarter corner between secs. 18 and 19; iron stake with cap	36 38 12.7	96 35 30.2	2,618
T. 25 N., Rs. 6 and 7 E., corner of secs. 13, 18, 19, and 24; iron stake with cap	36 38 12.5	96 36 02.0	2,592
T. 25 N., R. 6 E., 1 foot north of corner of secs. 13, 14, 23, and 24; iron post stamped "Prim. Trav. Sta., No. 12, 1916"	36 38 12.8	96 37 06.5	5,259
T. 25 N., R. 6 E., corner of secs. 17, 18, 19, and 20, at T road south near schoolhouse; iron stake with cap	36 38 13.3	96 41 25.1	21,082
T. 25 N., R. 6 E., quarter corner between secs. 18 and 19	36 38 13.2	96 41 57.6	2,646

Magnetic declination for north border of quadrangle, 9° 42′ E.; for south border of quadrangle, 9° 48′ E.; for east border of quadrangle, 9° 46′ E.; for west border of quadrangle, 9° 55′ E.; for center of quadrangle, 9° 49′ E.

Along highways in the extreme southwest corner of quadrangle.

Tps. 23 and 24 N., R. 5 E., corner of secs. 2, 3, 34, and 35, crossroads; stone	36 30 25.2	96 44 45.1	.....
Tps. 23 and 24 N., R. 5 E., quarter corner between secs. 2 and 35, at Ralston City boundary line; stone	36 30 25.0	96 44 12.9	2,631
Ralston City at intersection of Main and Second streets	36 30 25.1	96 44 08.2	384
Station 833=Station 126. Tie point	36 30 13.9	96 43 57.2	.....

Magnetic declination for southwest corner of quadrangle, 10° 01′ E.

Along highways near west center of quadrangle.

Station 835=Station 68	36 38 15.48	96 42 31.09	.....
T. 25 N., R. 5 E., quarter corner between secs. 14 and 23; iron stake with cap	36 38 13.2	96 44 06.8	7,803
T. 25 N., R. 5 E., corner of secs. 14, 15, 22, and 23, north-south fence line; iron stake with cap	36 38 13.1	96 44 39.1	2,635

HOMINY QUADRANGLE.

North along highways near west border of quadrangle, north half. (By W. F. Hicks in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 20 N., Rs. 7 and 8 E., 38 feet south by 65 feet east of north corner of secs. 1 and 6, and T road south at, in southeast angle of road forks, 2 feet north of east-west fence line; iron post stamped "Prim. Trav. Sta. No. 30, 1916"	36 14 45.9	96 29 57.6	9,619
T. 21 N., Rs. 7 and 8 E., south corner of secs. 31 and 36, T road north.	36 14 46.6	96 29 46.7	893
T. 21 N., Rs. 7 and 8 E., corner of secs. 25, 30, 31, and 36, center of crossroads	36 15 38.3	96 29 46.6	5,231
T. 21 N., Rs. 7 and 8 E., corner of secs. 19, 24, 25, and 30 at cross-roads; iron pipe	36 16 30.4	96 29 46.5	5,270
Oil loading station, Missouri, Kansas & Texas Ry., north-south road crossing at	36 16 49.6	96 29 46.6	1,940
T. 21 N., Rs. 7 and 8 E., corner of secs. 13, 18, 19 and 24, at stone schoolhouse, T road west	36 17 22.5	96 29 46.6	3,330
T. 21 N., Rs. 7 and 8 E., approximate corner of secs. 7, 12, 13, and 18, 2 miles west of Cleveland, Okla., at W. J. Searey's mail box, crossroads	36 18 14.7	96 29 46.9	5,275
Souter Bend ferry, on south bank of Arkansas River	36 18 25.1	96 29 59.8	1,490
Souter post office, south edge of Gypsy Oil Co.'s camp, T road west.	36 19 07.5	96 29 54.9	.....
Tps. 21 and 22 N., Rs. 7 and 8 E., corner of, 1 mile north of Souter post office; General Land Office iron post with cap	36 19 58.8	96 29 46.7	5,235
T. 22 N., R. 8 E., sec. 31, residence of Andy Fox, on Black Dog Creek, at road forks, center of triangle	36 20 22.4	96 29 18.2	3,338
T. 22 N., R. 7 E., southeast corner of sec. 24, road forks	36 22 01.1	96 29 36.9	10,093
T. 22 N., R. 7 E., northwest quarter of sec. 17, T road forks south-west	36 23 17.6	96 28 37.6	9,134
T. 22 N., R. 8 E., quarter corner between secs. 5 and 8, on east side of north-south road, near head of drain; iron stake with cap	36 24 16.7	96 28 09.5	6,398
Tps. 22 and 23 N., R. 8 E., 1,360 feet east of corner of secs. 5, 6, 31, and 32, near road forks, at gate, center of east-west road	36 25 11.5	96 28 27.3	4,818
Tps. 22 and 23 N., R. 8 E., corner of secs. 5, 6, 31, and 32; on north side of east-west road; iron stake with cap	36 25 10.9	96 28 43.9	1,353
Tps. 22 and 23 N., Rs. 7 and 8 E., corner of, residence of C. W. Carter, road forks at, on west bank of small stream; stone and General Land Office iron post with cap	36 25 11.0	96 29 46.7	5,135
T. 23 N., R. 8 E., 0.4 mile northeast of corner of, on top of ridge, crossroads	36 25 28.2	96 29 33.7	2,036
Crossroads, in east-west fence line; center of gate	36 25 45.9	96 29 25.5	1,912
T. 23 N., R. 8 E., east line of sec. 30, 70 feet northwest of forks of roads running north-west, south-east and south, at gate on north-south fence line, center of road	36 26 37.7	96 28.56.9	5,737
T. 23 N., R. 8 E., quarter corner between secs. 19 and 30, 100 feet west of angling road, at gate on east-west fence; iron stake with cap	36 26 55.7	96 29 15.8	2,386
Road forks	36 27 35.3	96 29 32.3	4,225
T. 23 N., Rs. 7 and 8 E., quarter corner between secs. 13 and 18, about 600 feet west of wagon road along east-west fence line: iron stake with cap	36 28 13.3	96 29 47.1	4,030
T. 23 N., Rs. 7 and 8 E., corner of secs. 7, 12, 13, and 18, near residence of Mr. Cox, at farm fence corners; iron stake with cap	36 28 39.6	96 29 46.9	2,660

Magnetic declination on west border of quadrangle, 9° 36′ E.

Near west border of quadrangle.

T. 22 N., R. 8 E., quarter corner between secs. 6 and 7; iron stake with cap	36 24 19.0	96 29 14.3	.....
T. 22 N., Rs. 7 and 8 E., corner of secs. 1, 6, 7, and 12; iron stake with cap	36 24 19.0	96 29 46.6	2,639

Along highways near south border of quadrangle (southwest corner).

T. 18 N., R. 8 E., corner of secs. 29, 30, 31, and 32, crossroads; stone	36 00 10.9	96 29 39.4	5,350
Happy Corner Church, 250 feet west of, in southwest corner of crossroads, 10 feet north and 12 feet west of T. 18 N., R. 8 E., stone corner of secs. 28, 29, 32, and 33; iron post stamped "Prim. Trav. Sta. No. 4, 1914"	36 00 10.9	96 28 35.0	5,293

HOMINY QUADRANGLE—Continued.

North along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 18 N., R. 8 E., corner of secs. 20, 21, 28, and 29, crossroads	36 01 03.2	96 28 34.8	5,288
T. 18 N., R. 8 E., corner of secs. 16, 17, 20, and 21, 0.25 mile north of Olive post office, 15 feet north of T road east; iron pipe	36 01 55.4	96 28 35.1	5,286
T. 18 N., R. 8 E., corner of secs. 17, 18, 19, and 20, T road north, 10 feet west of private lane south	36 01 55.5	96 29 39.7	5,307
T. 18 N., R. 8 E., corner of secs. 7, 8, 17, and 18, T road east	36 02 47.8	96 29 39.6	5,295
T. 18 N., R. 8 E., corner of secs. 5, 6, 7, and 8, T road west; stone	36 03 40.2	96 29 39.6	5,303
T. 18 N., R. 8 E., quarter corner between secs. 5 and 6, second-class T road east	36 04 05.3	96 29 39.5	2,638
Tps. 18 and 19, N., R. 8 E., corner of secs. 5, 6, 31, and 32, center of crossroads	36 04 32.6	96 29 39.6	2,654
T. 19 N., R. 8 E., corner of secs. 29, 30, 31, and 32, crossroads; stone	36 05 24.8	96 29 39.4	5,288
T. 19 N., R. 8 E., corner of secs. 19, 20, 29, and 30, 21 feet north by 18 feet east of center of crossroads, 3 feet southwest of jack oak tree; iron post stamped "Prim. Trav. Sta. No. 36, 1916"	36 06 17.5	96 29 39.4	5,325
T. 19 N., R. 8 E., quarter corner between secs. 17 and 18, on east-west fence line at telephone line north-south, 300 feet north of bluff on north side of Cimarron River; stone	36 07 35.6	96 29 39.5	7,902
T. 19 N., R. 8 E., corner of secs. 7, 8, 17, and 18, 30 feet south of jog in north-south fence line and fence line east on north side of gate; stone	36 08 01.8	96 29 39.4	2,645
T. 19 N., R. 8 E., 1,230 feet west of corner of secs. 5, 6, 7, and 8, near top of ridge, prairie-road crossing	36 08 54.3	96 29 54.4	5,451
T. 20 N., R. 8 E., closing corner on south side of secs. 31 and 32, at Pawnee-Creek county line, 30 feet south of actual road forks, in line with fence line east-west	36 09 48.8	96 28 54.4	7,391
T road fork, at east end of bridge over Horse Creek, 1.5 miles southeast of Terlton, Okla	36 10 26.9	96 28 52.1	3,860
Terlton, 0.75 mile southeast of, center of road crossing St. Louis-San Francisco Ry	36 10 41.1	96 28 53.2	1,445
Terlton, 0.4 mile southeast of, on east side of north-south road in angle of railroad property fences, 50 feet north of tracks, 175 feet northwest of milepost 455; iron post stamped "Prim. Trav. Sta. No. 37, 1916." Elevation, 780 feet, Okla	36 11 01.7	96 29 21.0	3,081
Terlton, on east side of quarter corner between secs. 19 and 30, T. 20 N., R. 8 E., cross streets	36 11 17.1	96 29 23.8	1,579
T. 20 N., R. 8 E., quarter corner between secs. 18 and 19, cross-roads 1 mile north of Terlton, Okla., stone	36 12 09.9	96 29 25.2	5,340
T. 20 N., R. 8. E., quarter corner between secs. 7 and 18, center of crossroads	36 13 02.1	96 29 25.8	5,285
T. 20 N., Rs. 7 and 8 E., corner of secs. 7, 12, 13, and 18, center of crossroads	36 13 02.1	96 29 58.2	2,665
T. 20 N., Rs. 7 and 8 E., corner of secs. 1, 6, 7, and 12, crossroads known as Dog Center; stone	36 13 54.4	96 29 58.0	5,299

Magnetic declination along west border of quadrangle, south half, 9° 36′ E.

North along public roads from southeast corner of quadrangle to West Tulsa. (By B. H. Yoakum in 1916.)

T. 18 N., R. 12 E., corner of secs. 27, 28, 33, and 34, Tulsa-Creek county line, T road south	36 00 10.7	96 01 45.5	.....
T. 18 N., R. 12 E., corner of secs. 26, 27, 34, and 35, T road south	36 00 10.8	96 00 41.2	5,290
T. 18 N., R. 12 E., corner of secs. 2, 3, 10, and 11; iron post at center of crossroads	36 03 40.0	96 00 41.2	.....
Tps. 18 and 19 N., R. 12 E., corner of secs. 2, 3, 34, and 35; iron post at T road east	36 04 31.3	96 00 41.2	5,179
T. 19 N., R. 12 E., corner of secs. 26, 27, 34, and 35; stone at cross-roads	36 05 23.6	96 00 41.1	5,290
T. 19 N., R. 12 E., quarter corner between secs. 26 and 27, T road west	36 05 49.8	96 00 41.1	2,648
T. 19 N., R. 12 E., corner of secs. 22, 23, 26, and 27; stone at T road west	36 06 16.0	96 00 40.8	2,651
T. 19 N., R. 12 E., 30 feet north by 30 feet west of crossroads, at corner of secs. 10, 11, 14, and 15, 0.5 mile southwest of West Tulsa, 245 feet south of St. Louis-San Francisco Ry. crossing; iron post stamped "Prim. Trav. Sta. No. 61, 1916"	36 08 01.0	96 00 40.8	10,614
West Tulsa station, 120 feet south of, Mitchell Street crossing of St. Louis-San Francisco Ry., center of middle track	36 08 15.6	96 00 30.2	1,713

HOMINY QUADRANGLE—Continued.

Along St. Louis-San Francisco Ry. from West Tulsa to Mannford.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 19 N., R. 12 E., corner of secs. 9, 10, 15, and 16, crossroads	36 08 00.5	96 01 45.1	
Price station, 370 feet east of northeast corner of station platform, 20 feet south of center of Frisco Line's track, between main track and siding, on east side of north-south private road crossing; iron post stamped "Prim. Trav. Sta. No. 60. Elev. 656"	36 08 08.1	96 03 52.8	10,504
Lost City, 275 feet southwest of station signboard, road crossing	36 07 26.2	96 05 55.9	10,950
Milepost 431, 700 feet west of, private-road crossing	36 07 16.0	96 06 28.7	2,884
Lost City, 1.3 miles west of, 900 feet east of Frisco Line's bridge over Fisher Creek, 50 feet south of center of track, on east side of private-road crossing; iron post stamped "Prim. Trav. Sta. No. 59, 1916. Elev. 649"	36 07 16.0	96 07 14.2	3,734
Fisher, 0.2 mile southeast of, on west side of north-south highway crossing, 100 feet south of center of Frisco Line's track; iron post stamped "Prim. Trav. Sta. No. 58, 1916. Elev. 653"	36 07 42.1	96 08 45.0	7,901
Fisher, 1 mile west of, road crossing	36 08 01.2	96 09 46.6	5,405
Milepost 345, 370 feet west of, private-road crossing	36 08 11.8	96 10 30.7	3,772
Private-road crossing	36 08 19.2	96 11 14.4	3,660
Frisco Line's bridge 437.2, center of	36 08 21.2	96 12 47.7	7,656
Keystone, 4 miles southeast of, 70 feet south of milepost 438, 50 feet south of center of Frisco Line's track; iron post stamped "Prim. Trav. Sta. No. 57. Elev. 683 Okla."	36 08 18.4	96 13 37.0	4,053
Frisco Line's bridge 439.5, center of track at underneath road crossing	36 08 28.0	96 15 08.1	7,531
Keystone, 0.5 mile southeast of, at road crossing, center of track	36 09 43.7	96 16 31.1	10,240
Keystone station, 520 feet east of, 75 feet north of road crossing, in east side of north-south highway; iron post stamped "Prim. Trav. Sta. No. 62, 1916. Elev. 684 Okla."	36 09 55.4	96 16 55.5	2,324
Keystone, 1.5 miles west of, road crossing	36 09 19.6	96 18 11.4	7,200
Keystone, 1.8 miles southwest of, 210 feet northeast of milepost 444, at east end of cut, 50 feet north of center of track; iron post stamped "696 Okla"	36 09 06.0	96 18 40.5	2,757
Salt Creek, west end of bridge over	36 08 39.9	96 19 53.5	6,540
Mannford, 2.2 miles east of, T. 19 N., R. 9 E., 960 feet north of corner of secs. 3, 4, 9, and 10, 47 feet north by 15 feet west of road crossing; iron post stamped "Prim. Trav. Sta. No. 63, 1916. Elev. 772"	36 09 03.9	96 21 05.8	6,405
Mannford station, 0.1 mile east of, 75 feet north of road crossing, in northeast corner of crossroads (north-south road between secs. 5 and 6); iron post stamped "Prim. Trav. Sta. No. 64, 1916. Elev. 740"	36 09 08.1	96 23 13.8	10,509

From Mannford south and west along public highway to west border of quadrangle.

Mannford, T road west at brick schoolhouse, corner of secs. 5, 6, 7, and 8, T. 19 N., R. 9 E	36 08 54.4	96 23 14.3	1,390
T. 19 N., R. 9 E., corner of secs. 7, 8, 17, and 18, T road east	36 08 02.1	96 23 14.1	5,284
T. 19 N., R. 9 E., corner of secs. 17, 18, 19, and 20; stone at center of crossroads	36 07 03.7	96 23 14.0	5,301
T. 19 N., Rs. 8 and 9 E., corner of secs. 13, 18, 19, and 24, center of east-west road at T road south	36 07 09.8	96 24 17.3	5,190
T. 19 N., R. 8 E., corner of secs. 13, 14, 23, and 24, T road south	36 07 09.8	96 25 21.7	5,283
T. 19 N., R. 8 E., quarter corner between secs. 14 and 23, in center of road; stone	36 07 09.7	96 25 54.0	2,647
T. 19 N., R. 8 E., corner of secs. 14, 15, 22, and 23, near vacant house; 30 feet northeast of fence corner	36 07 09.7	96 26 26.3	2,648
T. 19 N., R. 8 E., near center of sec. 22, road forks	36 06 45.2	96 26 56.6	3,513
T. 19 N., R. 8 E., near quarter corner between secs. 21 and 28, center of east-west road at gate in north-south fence line	36 06 17.4	96 28 02.8	6,114
T. 19 N., R. 8 E., approximate corner of secs. 20, 21, 28, and 29, midway between private roads north and south, center of east-west road	36 06 17.2	96 28 35.3	2,659
T. 19 N., R. 8 E., corner of secs. 19, 20, 29, and 30, 21 feet north by 18 feet east of center of crossroads; iron post stamped "Prim. Trav. Sta. No. 36, 1916"	36 06 17.5	96 29 39.4	5,262

HOMINY QUADRANGLE—Continued.

Along public road from Keystone south to Phantom triangulation station.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 19 N., R. 10 E., sec. 18, 900 feet north of residence of Mr. Alexander, center of north-south road, at gate in east-west fence line.	36 07 50.4	96 17 18.6	.....
T. 19 N., R. 10 E., gate in fence line between secs. 18 and 19, center of road	36 07 10.0	96 17 16.4	4,090
T. 19 N., R. 10 E., near line between secs. 19 and 30, road forks	36 06 19.8	96 17 24.7	5,121
T. 19 N., R. 10 E., on line between secs. 30 and 31, center of road at gate	36 05 25.4	96 17 10.8	5,613
Tps. 18 and 19 N., R. 10 E., between secs. 31 and 6, on Tulsa-Creek county line, 1,800 feet southwest of residence of Jack Lowden, center of road at gate in fence	36 04 32.9	96 17 01.0	5,378
T. 18 N., R. 10 E., stone quarter corner between secs. 6 and 7, 30 feet east of road in open prairie	36 03 40.7	96 17 18.0	5,459
T. 18 N., R. 10 E., near center of sec. 7, road forks	36 03 08.6	96 17 19.9	3,248
T. 18 N., R. 10 E., in southwest part of sec. 8; Phanton triang. station, on the highest part of a timbered ridge 15 miles from Red Fork, 5 miles southwest of Mr. Rockhammer's house, the corner common to secs. 7, 8, 17, and 18, T. 18 N., R. 10 E., may be reached from station by going due west 24.90 chains to north-south line, thence south 2.25 chains. Theodolite elevated 40 feet; iron b. m. post set in 1914 by C. B. Kendall	36 02 49.81	96 16 27.25	4,724

East along public highways from west border of triangle to Prue.

T. 20 N., Rs. 7 and 8 E., 38 ft. south by 65 feet east of north corner of secs. 1 and 6, at T road south, in southeast angle of road forks, 2 feet north of east-west fence line; iron post stamped "Prim. Trav. Sta. No. 30, 1916"	36 14 45.9	96 29 57.6	.....
T. 20 N., R. 8 E., north corner of secs. 5 and 6, T road south	36 14 46.1	96 28 55.1	5,119
T. 20 N., R. 8 E., stone quarter corner on north side of sec. 5, fence line south	36 14 45.9	96 28 23.0	2,628
T. 20 N., R. 8 E., north corner of secs. 4 and 5, stone at T road south	36 14 45.8	96 27 51.0	2,624
T. 21 N., R. 8 E., south corner of secs. 32 and 33, stone at T road north	36 14 45.7	96 27 38.0	1,063
T. 20 N., R. 8 E., north corner of secs. 3 and 4, T road south	36 14 45.4	96 26 46.0	4,257
T. 21 N., R. 8 E., south corner of secs. 33 and 34, T road north	36 14 45.3	96 26 33.9	995
Crossroads at Oklahoma Petroleum & Gasoline Co.'s plant	36 14 45.3	96 25 13.7	6,568
T. 20 N., R. 8 E., north corner of secs. 1 and 2, T road south	36 14 45.1	96 24 37.3	2,980
T. 21 N., R. 8 E., south corner of secs. 35 and 36, T road north	36 14 45.3	96 24 25.0	1,015
T. 21 N., R. 8 E., corner of secs. 25, 26, 35, and 36, stone at cross-roads	36 15 37.2	96 24 25.6	5,245
T. 21 N., R. 8 E., quarter corner between secs. 25 and 36, in center of road at fence line north and south; stone	36 15 36.4	96 23 53.4	2,640
T. 21 N., Rs. 8 and 9 E., corner of secs. 25, 30, 31, and 36, 90 feet east of angle in road; stone on hillside	36 15 36.9	96 23 20.8	2,673
T. 20 N., R. 9 E., north corner of secs. 5 and 6, 0.5 mile north of Dixie store, T road south	36 14 45.1	96 22 32.4	6,565
T. 20 N., R. 9 E., quarter corner on north side of sec. 5, 450 feet west of frame house, on east bank of creek; stone	36 14 45.1	96 22 00.2	2,640

Southeast along Missouri, Kansas & Texas Ry. from point about 2.5 miles west of Prue to Osage-Tulsa county-line post near Appalachia. (By B. H. Yoakum in 1916.)

Prue, 1.6 miles northwest of, 400 feet east of milepost 251, on north side of railroad, near right of way fence line at former north and south road crossing, in southeast angle of fence corner; iron post stamped "Prim. Trav. Sta. No. 65, 1916. Elev. 702 Okla."	36 14 18.9	96 20 50.2	6,308
Milepost 252, center of track opposite	36 14 00.9	96 19 56.2	4,793
T. 20 N., R. 9 E., road crossing on line between secs. 2 and 3, 480 feet west of Prue station	36 14 02.6	96 19 20.0	2,964
Prue, 0.9 mile east of, on north side of railroad, 600 feet south of quarter corner between secs. 1 and 2, T. 20 N., R. 9 E., on west side of private wagon road; iron post stamped "Prim. Trav. Sta. No. 66, 1916. Elev. 692 Okla." (This post was reset and new elevation established.)	36 14 06.0	96 18 16.2	5,238
Milepost 255, 380 feet east of, 70 feet west of trestle 255.1 over Rock Creek, private-road crossing	36 13 53.7	96 16 41.0	7,899
T. 20 N., R. 10 E., corner of secs. 5, 6, 7, and 8, 180 feet south of, private-road crossing	36 13 50.6	96 16 09.3	2,619
Pulare flag station, private-road crossing at	36 13 01.8	96 14 29.7	9,538
Private-road crossing	36 12 07.1	96 14 19.4	5,598
Appalachia, 1.5 miles northwest of, in SE. ¼ sec. 29, T. 20 N., R. 10 E., at private-road crossing, on east side of railroad, 6 feet north of gate in property-line fence; iron post stamped "Prim. Trav. Sta. No. 67, 1916. Elev. 678 Okla."	36 10 43.7	96 15 29.1	10,182
Appalachia, 0.25 mile northwest of, in southwest angle of road crossing Missouri, Kansas & Texas Ry.; Tulsa-Osage county-line post	36 09 43.1	96 15 34.0	6,142

HOMINY QUADRANGLE—Continued.

Tulsa to Sperry north along public roads.

An error of about 2.4″ in latitude and 1.6″ in longitude exists between Tulsa and Sperry.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tulsa, intersection of Duluth Place and Osage Avenue, corner of Cherokee, Creek, and Osage nations	36 09 40.6	96 00 03.6	.....
T. 20 N., R. 12 E., east corner of secs. 27 and 34, Osage-Tulsa county line, T road west	36 10 21.6	96 00 03.8	4,140
T. 20 N., R. 12 E., west corner of secs. 26 and 35, Osage-Tulsa county line, T road east	36 10 37.0	96 00 03.9	1,560
T. 20 N., R. 12 E., quarter corner between secs. 2 and 3; this corner is 150 feet west of road, in pasture	36 14 14.1	96 00 04.6	.....
Tps. 20 and 21 N., R. 12 E., west corner of secs. 2 and 35, on Osage-Tulsa county line at T road east; iron post stamped "Prim. Trav. Sta. No. 49, 1916. Elev. 746"	36 14 55.7	96 00 02.7	4,209

From point 1.25 miles south of Sperry, southwest along highways to Missouri, Kansas & Texas Ry., about 1 mile west of Wekiwa.

Osage-Tulsa county line, center of east and west road	36 16 57.0	96 00 04.6	.....
T. 21 N., R. 12 E., quarter corner between secs. 21 and 22, crossroads	36 16 53.3	96 00 49.5	3,690
T. 21 N., R. 12 E., center of sec. 21, crossroads at Delaware schoolhouse	36 16 53.5	96 01 21.6	2,634
T. 21 N., R. 12 E., quarter corner between secs. 20 and 21, private crossroads	36 16 53.6	96 01 53.1	2,573
T. 21 N., R. 12 E., quarter corner between secs. 19 and 20, T road south	36 16 53.9	96 02 57.7	5,290
T. 21 N., Rs. 11 and 12 E., 30 feet east of quarter corner between secs. 19 and 24, on east side of north and south road and south side of T road east; iron post stamped "Prim. Trav. Sta. No. 52, 1916. Elev. 711"	36 16 53.6	96 04 02.2	5,280
T. 21 N., R. 11 E., 0.25 mile west of quarter corner between secs. 25 and 26, 50 feet west of crossroads, 10 feet southeast of gate on public road, in root of 30-inch post-oak tree; two 20-penny wire nails bent across, painted "U. S. 680 B. M."	36 16.01.4	96 05 23.0	8,459
T. 21 N., R. 11 E., quarter corner between secs. 26 and 27	36 16 01.9	96 06 11.4	3,968
T. 21 N., R. 11 E., 0.5 mile east of quarter corner between secs. 27 and 28, 10 feet north of gate in public road, 8 feet southwest of three-way fence corner; iron post stamped "Prim. Trav. Sta. No. 53, 1916. Elev. 732"	36 16 01.9	96 06 43.9	2,663
T. 21 N., R. 11 E., near quarter corner between secs. 33 and 34, on north bank of Delaware Creek, east side of public road, in top of hickory stump; two 20-penny nails bent across	36 15 19.8	96 07 15.2	4,973
T. 21 N., R. 11 E., near center of sec. 33, at east and west fence and telephone line, center of gate in public road	36 15 09.5	96 07 39.6	2,253
Tps. 20 and 21 N., R. 11 E., 500 feet east of quarter corner on south side of sec. 33, 300 feet north of W. C. Heaton's residence, on south side of road at gate; chiseled square in top of stone marked "U. S. 772.8 B. M"	36 14 43.0	96 07 54.3	2,934
T. 20 N., R. 11 E., quarter corner between secs. 3 and 4	36 14 17.4	96 07 35.9	2,995
T. 20 N., R. 11 E., 20 feet south by 35 feet west of corner of secs. 3, 4, 9, and 10, 20 feet west of gate on public road, on north side of fence; iron post stamped "Prim. Trav. Sta. No. 54, 1916. Elev. 838"	36 13 51.1	96 07 36.3	2,660
T. 20 N., R. 11 E., quarter corner between secs. 16 and 17	36 12 33.4	96 08 40.2	9,448
T. 20 N., R. 11 E., NW. ¼ sec. 20, 15 feet east of gate on public road, just north of road forks; iron post stamped "Prim. Trav. Sta. No. 55, 1916"	36 11 56.4	96 09 21.3	5,026
T. 20 N., R. 11 E., quarter corner between secs. 19 and 20	36 11 41.0	96 09 43.1	2,374
T. 20 N., R. 11 E., SE. ¼ sec. 19, on scuth side of road, at gap in wire fence, in root of 14-inch black-jack oak; railroad tie date nail, marked "U. S. 779.8 B. M."	36 11 22.3	96 09 58.6	2,284
T. 20 N., Rs. 10 and 11 E., 150 feet south of road forks, corner of secs. 19, 24, 25, and 30	36 11 14.9	96 10 46.6	3,998
T. 20 N., R. 10 E., quarter corner between secs. 24 and 25, T road east	36 11 15.0	96 11 18.5	2,618
T. 20 N., R. 10 E., 55 feet north of quarter corner between secs. 25 and 36, at T road east; railroad date nail in root of 20-inch live-oak tree, marked "U. S. 768 B. M."	36 10 24.2	96 11 18.6	5,135
Tps. 19 and 20 N., R. 11 E., quarter corner on south side of sec. 36, at private road west on Osage-Tulsa county line; railroad tie date nail in root of 16-inch post-oak tree, marked "U. S. 777.3 B. M."	36 09 40.4	96 11 24.4	4,455
Wekiwa, 1 mile west of, 370 feet east of milepost 266, 100 feet north of T road east, 45 feet north by 25 feet east of road crossing of Missouri, Kansas & Texas Ry., 2 feet west of wire fence; iron post stamped "Prim. Trav. Sta. No. 56. Elev. 666"	36 09 06.0	96 11 23.8	3,475

HOMINY QUADRANGLE—Continued.

Along Missouri, Kansas & Texas Ry. west to Piatt.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	36 09 00.5	96 12 28.6	5,344
Piatt, 1 mile east of, 265 feet west of road crossing, 30 feet north of railroad, in bottom of milepost 264; railroad spike	36 08 55.5	96 13 35.9	5,547
Piatt, 450 feet east of, road crossing	36 09 09.7	96 14 37.2	5,054
From Missouri, Kansas & Texas Ry. north through center of quadrangle.			
T. 20 N., R. 10 E., corner of secs. 5, 6, 7, and 8, 180 feet north of railroad	36 13 52.4	96 16 09.2	.....
T. 20 N., R. 10 E., north corner of secs. 5 and 6, at angle in road	36 14 44.6	96 16 09.0	5,282
T. 21 N., R. 10 E., quarter corner between secs. 31 and 32, T road east	36 15 10.7	96 15 51.3	3,013
T. 21 N., R. 10 E., corner of secs. 29, 30, 31, and 32	36 15 36.8	96 15 51.3	2,631
T. 21 N., R. 10 E., quarter corner between secs. 20 and 29; iron post stamped "Prim. Trav. Sta. No. 68, 1916. Elev. 829"	36 16 28.9	96 15 19.0	5,896
T. 21 N., R. 10 E., at quarter corner between secs. 8 and 17, southeast corner of schoolhouse yard, district 65, at three-way fence corner; iron post stamped "Prim. Trav. Sta. No. 69, 1916. Elev. 853"	36 18 12.7	96 15 18.5	10,493
From point 1.25 miles south of Sperry to Missouri, Kansas & Texas Ry. about 1 mile west of Wekiwa.			
T. 21 N., R. 10 E., quarter corner between secs. 5 and 8	36 19 04.8	96 15 18.2	5,267
Tps. 21 and 22 N., R. 10 E., quarter corner between secs. 5 and 32	36 19 56.6	96 15 18.1	5,238
Junction of Buck Creek and Wild Horse Creek, 0.5 mile south of, on east bank of Buck Creek, gate in public road	36 21 12.8	96 15 21.6	7,710
Private lane west, gate in public road at	36 21 26.2	96 15 16.1	1,431
T. 22 N., R. 10 E., quarter corner between secs. 20 and 29, center of east-west road at gate in fence line north	36 21 39.6	96 15 19.4	1,378
Traverse by W. F. Hicks.			
T. 22 N., R. 10 E., in SE. ¼ sec. 8, road crossing of Hominy Creek	36 23 29.3	96 14 56.5	11,250
Tps. 22 and 23 N., R. 10 E., corner of secs. 5, 6, 31, and 32, 170 feet east of ridge road	36 25 08.9	96 15 50.8	11,005
T. 23 N., R. 10 E., in sec. 32, road fork	36 25 30.2	96 15 32.4	2,628
T. 23 N., R. 10 E., on line between secs. 29 and 32, 18-inch oak tree at east side of gate	36 26 03.8	96 15 32.9	3,397
T. 23 N., R. 10 E., corner of secs. 17, 18, 19, and 20	36 27 45.2	96 15 51.8	10,363
T. 23 N., R. 10 E., in sec. 8, crossroads	36 28 56.2	96 15 17.9	7,691
T. 23 N., R. 10 E., corner of secs. 5, 6, 7, and 8	36 29 29.7	96 15 50.6	4,314
Along north border of quadrangle. (By W. F. Hicks.)			
T. 23 N., Rs. 7 and 8 E., corner of secs. 7, 12, 13, and 18	36 28 39.6	96 29 46.9	.....
T. 23 N., R. 8 E., SW. ¼ sec. 7, road fork	36 28 54.1	96 29 34.8	1,771
T. 23 N., R. 8 E., SW. ¼ sec. 5, road fork	36 29 34.6	96 27 30.2	10,964
T. 23 N., R. 8 E., in sec. 4, road crossing ridge, in saddle	36 29 49.5	96 26 52.8	3,412
T. 23 N., R. 9 E., sec. 3, road fork, 1,000 feet north of house	36 29 58.9	96 20 03.3	.....
Gate in north-south fence	36 29 52.3	96 16 52.9	.....
T. 23 N., R. 10 E., SW. ¼ sec. 6, 75 feet south of road, in small opening; iron post stamped "Prim. Trav. Sta. No. 72, 1916"	36 29 41.0	96 16 34.8	1,869
T. 23 N., R. 10 E., corner of secs. 5, 6, 7, and 8	36 29 29.7	96 15 50.6	3,787
T. 23 N., R. 10 E., SW. ¼ sec. 4, road fork	36 29 39.6	96 14 38.9	5,937
Road forks	36 29 39.2	96 13 11.7	7,126
T. 23 N., R. 10 E., in south part of sec. 2, 7 feet southwest of road where road bends from southeast to east, in large rock flush with ground; aluminum tablet stamped "Prim. Trav. Sta. No. 73, 1916"	36 29 34.3	96 12 15.1	4,642
T. 23 N., R. 11 E., 20 feet west of corner fence post at second-class road south, quarter corner between secs. 7 and 8	36 29 04.4	96 09 24.3	14,273
T. 23 N., R. 11 E., quarter corner between secs. 8 and 9, 125 feet west of gate in east and west fence	36 29 04.7	96 08 19.6	5,288
T. 23 N., R. 11 E., S. ½ sec. 9, road forks	36 28 48.2	96 07 48.6	3,029
Gate in north and south fence, north part of	36 28 36.7	96 06 42.6	5,513

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HOMINY QUADRANGLE—Continued.

Along north border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Avant, 2 miles west of, Midland Valley R. R., trestle over Bird Creek, east stone pier, 3.5 feet from ground in east fence and 1.5 feet from south face, in vertical face of sandstone block; bronze tablet stamped "Prim. Trav. Sta. No. 79, 1916"	36 29 03.0	96 05 15.6	7,589
T. 23 N., R. 11 E., sec. 12, road crossing Midland Valley R. R.	36 29 00.4	96 04 20.0	4,541
Avant, intersection of Main Street and road from Skiatook	36 29 16.2	96 03 41.7	3,518
Crossroads	36 29 31.1	96 03 12.2	2,838
Concrete culvert	36 29 39.4	96 02 05.4	5,522
Skiatook, 4 miles north of, T. 23 N., R. 12 E., near line between secs. 34 and 35, under east bank of Tyner Creek, 50 feet east of stream and 40 feet southwest of fence corner post at bend in road; iron post stamped "Prim. Trav. Sta. No. 78, 1916"	36 25 24.4	96 00 03.9	

East across north half of quadrangle from west border to Skiatook. (By B. H. Yoakum and W. F. Hicks in 1916.)

T. 22 N., R. 8 E., corner of secs. 9, 10, 15, and 16	36 23 27.1	96 26 33.1	
T. 22 N., R. 8 E., corner of secs. 10, 11, 14, and 15	36 23 25.8	96 25 29.1	5,240
T. 22 N., R. 8 E., corner of secs. 11, 12, 13, and 14, just east of T road south	36 23 26.1	96 24 24.7	5,264
T. 22 N., R. 8 E., quarter corner between secs. 12 and 13, at private T road south	36 23 25.9	96 23 53.1	2,590
T. 22 N., Rs. 8 and 9 E., corner of secs. 7, 12, 13, and 18, at T road south, 985 feet east of crossing of Missouri, Kansas & Texas Ry.	36 23 25.8	96 23 21.5	2,588
T. 22 N., R. 9 E., quarter corner between secs. 7 and 18, 200 feet northeast of R. M. Miller's residence	36 23 26.1	96 22 49.3	2,630
T. 22 N., R. 9 E., corner of secs. 7, 8, 17, and 18, 22 feet north by 38 feet west of, in east side of north and south road and north side of T road east, 2 feet from fence corner; iron post stamped "Prim. Trav. Sta. No. 70, 1916"	36 23 26.5	96 22 16.6	2,680
T. 22 N., R. 9 E., quarter corner between secs. 8 and 17, center of east and west road at gate in north and south fence line	36 23 26.1	96 21 44.8	2,596
T. 22 N., R. 9 E., corner of secs. 8, 9, 16, and 17, center of east-west road at gate in north-south fence line	36 23 26.0	96 21 12.4	2,650
T. 22 N., R. 9 E., quarter corner between secs. 9 and 16, 300 feet west of road forks	36 23 25.8	96 20 40.2	2,634
T. 22 N., R. 9 E., corner of secs. 9, 10, 15, and 16, at T road north	36 23 25.6	96 20 08.1	2,629
T. 22 N., R. 9 E., in sec. 15, forks of road	36 23 16.3	96 19 40.2	2,463
T. 22 N., R. 9 E., quarter corner between secs. 14 and 15, 150 feet north of east-west road	36 22 59.7	96 19 03.9	3,416
Boar Creek schoolhouse, 3,000 feet northwest of forks of road	36 22 53.5	96 18 22.9	3,408
T. 22 N., R. 9 E., corner of secs. 13, 14, 23, and 24, at Boar Creek schoolhouse, on hill at bend in road	36 22 33.5	96 17 59.1	2,808
T. 22 N., R. 9 E., quarter corner between secs. 13 and 24, at fence line south	36 22 33.4	96 17 27.0	2,626
T. 22 N., Rs. 9 and 10 E., corner of secs. 13, 18, 19, and 24, in center of crossroads; stone	36 22 33.5	96 16 54.7	2,638
T. 22 N., R. 10 E., quarter corner between secs. 18 and 19, center of road at north-south fence line	36 22 32.3	96 16 23.4	2,568
T. 22 N., R. 10 E., corner of secs. 17, 18, 19, and 20, 110 feet southwest of road forks	36 22 32.1	96 15 51.2	2,631
T. 22 N., R. 10 E., quarter corner between secs. 17 and 20, 650 feet west of north and south road at T fence east	36 22 31.8	96 15 19.1	2,629
T. 22 N., R. 10 E., corner of secs. 15, 16, 21, and 22, iron post stamped "Prim. Trav. Sta. No. 74, 1916. Elev. 682"	36 22 31.0	96 13 42.5	7,906
T. 22 N., R. 10 E., near quarter corner between secs. 15 and 22, road forks	36 22 05.6	96 12 34.8	6,109
T. 22 N., R. 10 E., near corner of secs. 13, 14, 23, and 24, east part of gate, witness tree; nail in root of	36 22 31.0	96 11 32.4	5,708
T. 22 N., Rs. 10 and 11 E., quarter corner between secs. 19 and 24.	36 22 05.5	96 10 27.7	5,890
Road forks	36 22 04.5	96 09 17.3	5,755
T. 22 N., R. 11 E., corner of secs. 20, 21, 28, and 29	36 21 40.6	96 08 18.7	5,369
Lake View schoolhouse, 5 feet southeast of southeast corner of school yard; iron post stamped "Prim. Trav. Sta. No. 75, 1916"	36 21 14.6	96 07 45.6	3,773
Hominy Creek, center of bridge over	36 21 00.2	96 06 42.6	5,358
T road south	36 21 40.7	96 04 42.8	10,625
Quapaw Creek, bridge over; name plate at southwest corner	36 21 40.9	96 04 07.9	2,854
T. 22 N., R. 12 E., corner of secs. 19, 20, 29, and 30	36 21 40.8	96 02 56.9	5,809
T. 22 N., R. 12 E., quarter corner between secs. 20 and 21	36 22 06.4	96 01 52.2	5,890
Crossroads	36 22 06.5	96 00 47.4	5,300
Skiatook water tower, on north side of concrete base; bronze tablet stamped "Prim. Trav. Sta. No. 76, 1916"	36 22 08.6	96 00 01.8	3,736

HOMINY QUADRANGLE—Continued.

Along east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Skiatook 4 miles north of, T. 23 N., R. 12 E., secs. 34 and 35, under east bank of Tyner Creek, 50 feet east of stream, 40 feet southwest of fence corner post at bend in road; b. m. post stamped "Prim. Trav. Sta. No. 78, 1916, 644"	36 25 24.42	96 00 03.86	.....

Magnetic declination for southeast quarter of quadrangle, 9° E.; for southwest quarter of quadrangle, 9° 30′ E.; for northwest quarter of quadrangle, 9° 40′ E.; for northeast quarter of quadrangle, 9° 15′ E.

KAW QUADRANGLE.

West along highways near south border of quadrangle. **(By B. H. Yoakum in 1916.)**

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Station 353=Station 2, Book H 3376, page 2	36 44 35.46	96 45 41.77	.....
Milepost 21, center of track opposite	36 45 05.6	96 46 17.0	4,190
Milepost 20, center of track opposite	36 45 30.1	96 47 10.8	5,023
Soldani stockyard switch, wagon-road crossing	36 45 32.3	96 47 51.2	3,293
Kaw, 1.7 miles southwest of, 1,480 feet west of road crossing at Soldani stockyard switch, 500 feet east of milepost 19, on top of ridge, on north side of tracks near fence line; iron post stamped "Prim. Trav. Sta. No. 13, 1916. Elev. 1035 feet"	36 45 38.7	96 48 07.4	1,470
Atchison, Topeka & Santa Fe Ry. bridge 18 A, over Arkansas River, west end	36 45 42.3	96 49 15.9	5,583
Kaw station, Atchison, Topeka & Santa Fe Ry., center of track opposite semaphore	36 45 53.0	96 49 55.9	3,433
T. 26 N., R. 4 E., corner of secs. 1, 2, 11, and 12, T road west	36 45 11.0	96 50 04.0	4,305
T. 26 N., R. 4 E., corner of secs. 2, 3, 10, and 11, T road north	36 45 10.6	96 51 08.6	5,256
T. 26 N., R. 4 E., quarter corner between secs. 3 and 10, on fence line north-south; stone	36 45 10.4	96 51 41.2	2,650
T. 26 N., R. 4 E., corner of secs. 3, 4, 9, and 10, at road angle north and east; stone	36 45 10.1	96 52 13.5	2,631
T. 26 N., R. 4 E., corner of secs. 4, 5, 8, and 9, in northwest corner of T road north, 1 foot north of stone corner fence post; iron post stamped "Prim. Trav. Sta. No. 14, 1916"	36 45 10.0	96 53 17.5	5,205
T. 26 N., R. 4 E., quarter corner between secs. 5 and 8; stone marked quarter	36 45 10.0	96 53 49.8	2,628
T. 26 N., R. 4 E., corner of secs. 5, 6, 7, and 8, T road south; stone corner	36 45 10.0	96 54 21.9	2,610
T. 26 N., Rs. 3 and 4 E., corner of secs. 1, 6, 7, and 12, crossroads; stone corner	36 45 10.3	96 55 25.2	5,153
T. 26 N., R. 3 E., corner of secs. 1, 2, 11, and 12, center of crossroads	36 45 10.0	96 56 29.5	5,237
T. 26 N., R. 3 E., corner of secs. 2, 3, 10, and 11, crossroads at schoolhouse; stone corner	36 45 10.0	96 57 34.4	5,275
T. 26 N., R. 3 E., quarter corner between secs. 3 and 10, north-south fence; stone marked quarter	36 45 09.9	96 58 06.5	2,618
T. 26 N., R. 3 E., corner of secs. 3, 4, 9, and 10, crossroads	36 45 09.7	96 58 39.2	2,660
T. 26 N., R. 3 E., corner of secs. 4, 5, 8, and 9, center of crossroads	36 45 09.6	96 59 44.0	5,270
T. 26 N., R. 3 E., corner of secs. 5, 6, 7, and 8, at crossroads, 2 feet southeast of stone corner fence post; iron post stamped "Prim. Trav. Sta. No. 15, 1916"	36 45 09.2	97 00 48.0	5,209

Magnetic declination along south border of quadrangle, 10° 20′ E.

KAW QUADRANGLE—Continued.

West along highways through center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	Feet.
T. 28 N., R. 5 E., quarter corner between secs. 27 and 34, on Orange-Kay county line; iron stake with cap	36 52 07.9	96 45 07.8	
T. 28 N., R. 5 E., corner of secs. 27, 28, 33, and 34	36 52 07.7	96 45 40.3	2,638
Tps. 27 and 28 N., R. 5 E., corner of secs. 3, 4, 33, and 34, center of T road west	36 51 16.1	96 45 40.6	5,221
Tps. 27 and 28 N., R. 5 E., quarter corner of secs. 4 and 33, center of road at north and south fence line; stone corner	36 51 15.7	96 46 13.0	2,639
Tps. 27 and 28 N., R. 5 E., approximate corner of secs. 4, 5, 32, and 33, at fence line north, center of road	36 51 15.7	96 46 45.2	2,610
Tps. 27 and 28 N., R. 5 E., 0.25 mile east of corner of secs. 5, 6, 31, and 32, on north side of road, 15 feet southeast of T fence line north; t. b. m. chiseled "U. S. 1094"	36 51 15.6	96 47 33.9	3,962
Tps. 27 and 28 N., R. 5 E., corner of secs. 5, 6, 31, and 32, T road south at jog in east and west road	36 51 15.0	96 47 50.4	1,338
Tps. 27 and 28 N., Rs. 4 and 5 E., corner of secs. 1, 6, 31, and 36, center of T road south; stone corner	36 51 15.0	96 48 54.8	5,233
T. 28 N., R. 4 E., 940 feet N. 73° 30′ W., from center of sec. 36, 75 feet west of edge of prominent bluff, 10 feet from rock monument; aluminum tablet concreted in flat rock, stamped "Prim. Trav. Sta. No. 19, 1916. Elev. 1,180 feet"	36 51 45.4	96 49 37.4	4,634
T. 28 N., R. 4 E., corner of secs. 25, 26, 35, and 36, north side of east and west road; stone corner	36 52 07.0	96 49 59.7	2,835
T. 28 N., R. 4 E., corner of secs. 22, 23, 26, and 27, center of cross-roads; stone corner	36 52 50.1	96 51 04.6	7,450
T. 28 N., R. 4 E., 615 feet west of corner of secs. 22, 23, 26, and 27, on south side of road, 3 feet from fence; iron post stamped "Prim. Trav. Sta. No. 20, 1916. Elev. 1,181 feet"	36 52 58.9	96 51 12.1	614
T. 28 N., R. 4 E., corner of secs. 21, 22, 27, and 28, center of T road north	36 52 59.0	96 52 09.6	4,670
T. 28 N., R. 4 E., corner of secs. 20, 21, 28, and 29; top of corner stone chiseled. Elev. 1,133 feet	36 52 59.2	96 53 13.7	5,210
T. 28 N., R. 4 E., quarter corner between secs. 20 and 29; 390 feet west is small bridge chiseled "U. S. B. M." Elev. 1,084 feet	36 52 59.2	96 53 46.4	2,655
T. 28 N., R. 4 E., corner of secs. 19, 20, 29, and 30; chiseled. Elev. 1,121 feet	36 52 59.2	96 54 19.0	2,650
T. 28 N., R. 4 E., quarter corner between secs. 19 and 30, center of road at north and south fence line	36 52 59.2	96 54 51.7	2,650
T. 28 N., Rs. 3 and 4 E., corner of secs. 19, 24, 25, and 30, cross-roads; stone corner chiseled. Elev. 1,159 feet	36 52 59.2	96 55 24.2	2,645
T. 28 N., Rs. 3 and 4 E., 1,680 feet west of corners of secs. 19, 24, 25, and 30, on top of ridge, north side of road, 3 feet from fence line; iron post stamped "Prim. Trav. Sta. No. 21, 1916." Elev. 1,910 feet	36 52 59.5	96 55 45.0	1,690
T. 28 N., R. 3 E., center of east end of steel bridge over Arkansas River, center of floor over north steel pier; marked "U. S. B. M." Elev. 1,019 feet	36 52 58.9	96 56 43.9	4,785
T. 28 N., R. 3 E., corners of secs. 22, 23, 26, and 27, center of east and west road at T road south; elevation destroyed	36 52 58.6	96 57 33.9	4,060
T. 28 N., R. 3 E., corner of secs. 21, 22, 27, and 28, at Mound Valley schoolhouse, center of crossroads	36 52 58.6	96 58 39.1	5,299
T. 28 N., R. 3 E., 300 feet northeast of corner of secs. 20, 21, 28, and 29, on north side of crossroads, 2 feet from fence line; iron post stamped "Prim. Trav. Sta. No. 22, 1916." Elev. 1,124 feet	36 52 58.9	96 59 40.3	4,978

Magnetic declination through center of quadrangle (east-west), 10° 22′ E.

East along highways near north border of quadrangle.

T. 29 N., R. 3 E., north corner of secs. 16 and 17, T road south	36 59 55.7	96 59 36.1	
Kansas-Oklahoma State line, milepost 109	36 59 55.9	96 58 52.8	3,510
T. 29 N., R. 3 E., north corner of sec. 15 and 16, T road south	36 59 55.9	96 58 31.0	1,765
T. 35 S., R. 4 E., south corner of secs. 14 and 15, T road north	36 59 55.9	96 58 02.2	2,340
Kansas-Oklahoma State line, milepost 108	36 59 55.8	96 57 46.7	1,260
T. 29 N., R. 3 E., north corner of secs. 14 and 15, T road south	36 59 55.8	96 57 26.2	1,660
T. 35 S., R. 4 E., south corner of secs. 13 and 14, T road north	36 59 55.9	96 56 57.1	2,365
Kansas-Oklahoma State line, milepost 107	36 59 56.0	96 56 41.7	1,250
T. 29 N., R. 3 E., north corner of secs. 13 and 14, T road south	36 59 55.7	96 56 21.2	1,660
T. 35 S., R. 5 E., quarter corner of sec. 17, T road north on Kansas-Oklahoma State line	36 59 56.2	96 54 12.7	10,429
T. 29 N., R. 4 E., north corner of secs. 16 and 17, at T road south, 1 foot south of corner stone on Kansas-Oklahoma State line; iron post stamped "Prim. Trav. Sta. No. 18, 1916"	36 59 56.3	96 53 07.9	5,252
T. 29 N., R. 4 E., north corner of secs. 15 and 16, T road south; stone corner	36 59 56.5	96 52 02.5	5,305
T. 29 N., R. 4 E., north corner of secs. 14 and 15, T road south; stone corner	36 59 56.4	96 50 57.2	5,300
T. 35 S., R. 5 E., south corner of secs. 13 and 14, T road north	36 59 56.4	96 50 26.7	2,475

KAW QUADRANGLE—Continued.

Erst along highways near north border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 29 N., R. 4 E., north corner of secs. 13 and 14, T road south; stone corner	36 59 56.4	96 49 52.0	2,820
T. 35 S., Rs. 5 and 6 E., south corner of secs. 13 and 18, T road north.	36 59 56.4	96 49 21.4	2,480
Kansas-Oklahoma State line at boundary post painted "State Line"	36 59 56.3	96 49 00.4	1,703
T. 35 S., R. 6 E., south corner of secs. 17 and 18, 5 feet west of north fence; stone corner	36 59 56.6	96 48 15.9	3,614
T. 29 N., R. 5 E., north corner of secs. 17 and 18, T road south	36 59 56.4	96 47 43.0	2,670
T road north	36 59 56.3	96 47 27.1	1,285
T. 35 S., R. 6 E., south corner of secs. 16 and 17, 1,325 feet east of T road north, on Kansas-Oklahoma State line; stone corner	36 59 56.4	96 47 10.8	1,325
T. 29 N., R. 3 E., closing corner on north side secs. 16 and 17, on east-west fence line, 445 feet west of Maple City-Hardy wagon road	36 59 56.4	96 46 37.4	2,705
T. 35 S., R. 6 E., south corner of secs. 15 and 16, Kansas-Oklahoma State line, 900 feet east of Maple City-Hardy wagon road, in Meyer Creek bottom, on east-west fence line; stone corner	36 59 56.4	96 46 05.5	2,590
T. 29 N., R. 5 E., north corner of secs. 15 and 16, Kansas-Oklahoma State line, east and west fence; stone corner	36 59 56.3	96 45 33.0	2,635
T. 29 N., R. 5 E., quarter closing corner on north side of sec. 15, corner post at northwest corner of Osage County, 6 feet east of stone closing corner of T. 35 S., R. 6 E., secs. 14 and 15; General Land Office iron post	36 59 56.2	96 45 00.4	2,652

Magnetic declination along north border of quadrangle, 10° 10′ E.

South along highways near south border of quadrangle.

Tps. 26 and 27 N., R. 5 E., quarter corner between secs. 3 and 34; iron stake with cap	36 46 02.5	96 45 08.8	.....
Tps. 26 and 27 N., R. 5 E., corner of secs. 3, 4, 33, and 34; iron stake with cap	36 46 02.5	96 45 41.2	2,636
T. 26 N., R. 5 E., quarter corner between secs. 3 and 4; iron stake with cap	36 45 36.2	96 45 41.3	2,655
T. 26 N., R. 5 E., corner of secs. 3, 4, 9, and 10; iron stake with cap	36 45 10.2	96 45 41.3	2,630

MALLON QUADRANGLE.

Along highway in northwest corner of quadrangle. (By B. H. Yoakum in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tps. 17 and 18 N., R. 5 E., corner of secs. 2, 3, 34, and 35, 1 mile northeast of Cushing crossroads; stone	35 59 08.1	96 44 58.8	.....
T. 17 N., R. 5 E., corner of secs. 2, 3, 10, and 11, center of crossroads.	35 58 15.8	96 44 57.5	5,285

Magnetic declination for extreme northwest corner of quadrangle, 9° 18′ E.

South along highways through center of quadrangle. (By B. H. Yoakum in 1916.)

Drumright, intersection of Skinner Avenue and Broadway Street, quarter corner between secs. 6 and 31, Tps. 17 and 18 N., R. 7 E.	35 59 18.6	96 36 37.8	.....
Drumright, 1.5 miles southwest of, quarter corner between secs. 6 and 7, T. 17 N., R. 7 E., at crossroads; General Land Office iron post	35 58 25.7	96 36 38.5	5,353
T. 17 N., R. 7 E., quarter corner between secs. 7 and 18, T road west	35 57 33.3	96 36 38.2	5,302
T. 17 N., R. 7 E., quarter corner between secs. 18 and 19, crossroads.	35 56 41.4	96 36 38.5	5,246
T. 17 N., R. 7 E., corner of secs. 19, 20, 29, and 30	35 55 48.6	96 36 05.8	5,981
Shamrock, 1 mile northwest of, corner of secs. 29, 30, 31, and 32; General Land Office iron post at T road north	35 54 56.6	96 36 06.1	5,257
T. 17 N., R. 7 E., west corner of secs. 30 and 31, T road east on Lincoln-Creek county line	35 54 56.9	96 37 11.0	5,337
T. 17 N., R. 6 E., east corner of secs. 25 and 36, T road west	35 54 47.0	96 37 11.1	1,002
T. 17 N., Rs. 6 and 7 E., south corner of secs. 31 and 36, on Lincoln-Creek county line, at angle in road; iron post stamped "Prim. Trav. Sta. No. 39, 1916. Elev. 977"	35 54 04.5	96 37 11.0	4,293

MALLON QUADRANGLE—Continued.

Along highways south through center of triangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 16 N., Rs. 6 and 7 E., north corner of secs. 1 and 6, at angle in road; iron post stamped with land number. Elev. 962	35 54 04.5	96 37 07.3	296
T. 17 N., R. 6 E., south corner of secs. 35 and 36, T road north	35 53 54.5	96 37 27.8	1,966
T. 16 N., R. 6 E., north corner of secs. 1 and 2, T road south	35 53 54.8	96 37 40.7	1,060
T. 16 N., R. 6 E., corner of secs. 1, 2, 11, and 12, crossroads	35 53 03.8	96 37 40.6	5,154
T. 16 N., R. 6 E., quarter corner between secs. 11 and 12, crossroads	35 52 37.9	96 37 40.4	2,625
T. 16 N., R. 6 E., corner of secs. 11, 12, 13, and 14, near center of crossroads, in root of white-oak tree; two bent nails in notch	35 52 11.8	96 37 40.1	2,638
T. 16 N., R. 6 E., corner of secs. 13, 14, 23, and 24, crossroads	35 51 19.3	96 37 39.5	5,305
T. 16 N., R. 6 E., approximate corner of secs. 23, 24, 25, and 26, center of north and south road, 160 feet south of crossroads, 30 feet north of east and west fence line	35 50 26.8	96 37 39.0	5,310
T. 16 N., R. 6 E., approximate corner of secs. 25, 26, 35, and 36, crossroads	35 49 34.4	96 37 38.9	5,292
Camp Creek, center of small iron truss bridge over	35 49 01.1	96 37 38.3	3,370
Tps. 15 and 16 N., R. 6 E., corner of secs. 1, 2, 35, and 36, T road west	35 48 42.6	96 37 38.4	1,880
T. 15 N., R. 6 E., corner of secs. 1, 2, 11, and 12, crossroads	35 47 49.4	96 37 37.6	5,375
T. 15 N., R. 6 E., corner of secs. 11, 12, 13, and 14, crossroads	35 46 56.9	96 37 37.2	5,305
T. 15 N., R. 6 E., corner of secs. 13, 14, 23, and 24, crossroads	35 46 04.6	96 37 37.0	5,289
Stroud, 2 miles northeast of, 30 feet north by 30 feet west of corner of secs. 23, 24, 25, and 26, T. 15 N., R. 6 E., at northwest corner of T road north, 6 feet north of corner fence post; iron post stamped "Prim. Trav. Sta. No. 40, 1916"	35 45 13.0	96 37 37.4	5,222
T. 15 N., R. 6 E., east corner of secs. 24 and 25, T road west on Lincoln-Creek county line	35 45 12.9	96 37 11.3	2,147
T. 15 N., R. 7 E., west corner of secs. 19 and 30	35 45 18.8	96 37 10.8	600

East along highways near south border of quadrangle.

T. 15 N., R. 7 E., corner of secs. 19, 20, 29, and 30, crossroads	35 45 18.6	96 36 03.7	5,535
T. 15 N., R. 7 E., corner of secs. 20, 21, 28, and 29, T road south, in line with east and west road at road northwest	35 45 18.7	96 34 59.7	5,274
Camp Creek, east end of approach to bridge	35 45 19.0	96 34 27.3	2,670
Milfay, crossroads, stone corner of secs. 21, 22, 27, and 28, T. 15 N., R. 7 E.	35 45 18.7	96 33 55.7	2,604
T. 15 N., R. 7 E., approximate corner of secs. 22, 23, 26, and 27, T road west, 70 feet south of road forks	35 45 18.9	96 32 51.8	5,265
T. 15 N., R. 7 E., corner of secs. 23, 24, 25, and 26, road forks	35 45 19.0	96 31 47.8	5,276
T. 15 N., Rs. 7 and 8 E., corner of secs. 19, 24, 25, and 30, crossroads	35 45 19.1	96 30 43.7	5,282
T. 15 N., Rs. 7 and 8 E., corner of secs. 13, 18, 19, and 24, 19 feet northeast of bearing tree, marked "S24", 15 feet northwest of bearing tree marked "S19"; chiseled square in sandstone	35 46 11.4	96 30 43.6	5,282
T. 15 N., Rs. 7 and 8 E., 30 feet south by 25 feet east of corner of secs. 7, 12, 13, and 18, at corner of wire fence, in southeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 7, 1914"	35 47 03.4	96 30 43.3	5,262

East along highways through center of quadrangle.

Shamrock, 0.5 mile northwest of, near quarter corner of secs. 29 and 32, T. 17 N., R. 7 E.	35 54 56.7	96 35 35.7	.....
Shamrock, railroad crossing at station, main track	35 54 47.7	96 34 26.6	5,756
T. 17 N., R. 7 E., quarter corner between secs. 27 and 34, 70 feet west of crossroads, in top of ridge; iron pipe	35 54 56.6	96 33 25.3	5,123
T. 17 N., R. 7 E., corner of secs. 26, 27, 34, and 35, crossroads	35 54 56.7	96 32 53.5	2,614
T. 17 N., R. 7 E., 850 feet north of stone marked "S C" at south corner of secs. 34 and 35, crossroads	35 54 21.3	96 32 53.3	4,492
T. 17 N., R. 7 E., south corner of secs. 35 and 36, 40 feet southeast of corner fence post; stone marked "S C"	35 54 04.4	96 31 48.8	5,365
T. 17 N., Rs. 7 and 8 E., south corner of secs. 31 and 36; iron post stamped with General Land Office numbers. Elev. 949	35 54 04 4	96 30 45.6	5,201
T. 16 N., Rs. 7 and 8 E., secs. 1 and 6, north corner of; iron post stamped with General Land Office numbers, also elevation 958; "Prim. Trav. Sta. No. 5, 1914" (112 feet west of this station is standard iron post, stamped with Generol Land Office numbers for T. 17 N., Rs. 7 and 8 E., secs. 31 and 36, north corner)	35 54 04.4	96 30 43.0	213

Magnetic declination north and south through center of quadrangle, 9° 32′ E.; east and west through center of quadrangle, 9° 22′ E.; for south border of quadrangle, 10° 07′ E.

NEWKIRK QUADRANGLE.

North along highways near west border of quadrangle (north half). (By B. H. Yoakum in 1916).

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 26 N., R. 3 E., corner of secs. 5, 6, 7, and 8, crossroads, 2 feet southeast of stone corner fence post; iron post stamped "Prim. Trav. Sta. No. 15, 1916"	36 45 09.2	97 00 48.0	.....
Tps. 26 and 27 N., R. 3 E., corner of secs. 5, 6, 31, and 32, center of crossroads; stone corner	36 46 01.6	97 00 49.1	5,300
T. 27 N., R. 3 E., quarter corner between secs. 31 and 32, private road west, fence line east	36 46 27.6	97 00 49.0	2,635
T. 27 N., R. 3 E., corner of secs. 29, 30, 31, and 32, center of cross roads	36 46 53.8	97 00 49.0	2,643
T. 27 N., R. 3 E., quarter corner between secs. 29 and 30, center of road at east-west fence line	36 47 19.9	97 00 48.6	2,639
T. 27 N., R. 3 E., corner of secs. 19, 20, 29, and 30, center of crossroads.	36 47 45.9	97 00 48.3	2,637
T. 27 N., R. 3 E., quarter corner between secs. 19 and 20, center of road at east-west fence line	36 48 12.0	97 00 48.4	2,635
T. 27 N., R. 3 E., corner of secs. 17, 18, 19, and 20, center of cross-roads	36 48 38.2	97 00 48.3	2,645
T. 27 N., R. 3 E., quarter corner between secs. 17 and 18, center of road at east-west fence line	36 49 04.2	97 00 47.9	2,635
T. 27 N., R. 3 E., corner of secs. 7, 8, 17, and 18, crossroads: stone corner	36 49 30.3	97 00 48.0	2,635
T. 27 N., R. 3 E., quarter corner between secs. 7 and 8, center of road at east-west fence line	36 49 56.3	97 00 48.0	2,635
T. 27 N., R. 3 E., corner of secs. 5, 6, 7, and 8, center of crossroads at schoolhouse 33	36 50 22.4	97 00 48.1	2,635
T. 27 N., R. 3 E., quarter corner between secs. 5 and 6, center of road at east-west fence line	36 50 48.0	97 00 48.3	2,595
T. 27 N., R. 3 E., 430 feet south of corner of secs. 5 and 6, 55 feet north by 20 feet east of north-south road crossing Atchison, Topeka & Santa Fe Ry., 2½ feet south of stone corner fence post; iron post stamped "Prim. Trav. Sta. No. 16, 1916." Elev. 1,100 feet	36 51 09.4	97 00 48.1	2,160
T. 28 N., R. 3 E., quarter corner between secs. 31 and 32, at east-west fence line	36 51 40.1	97 00 48.8	3,102
T. 28 N., R. 3 E., corner of secs. 29, 30, 31, and 32, center of cross-roads	36 52 06.3	97 00 48.9	2,655
T. 28 N., R. 3 E., quarter corner between secs. 29 and 30, center of road at east-west fence line	36 52 32.3	97 00 49.1	2,630
T. 28 N., R. 3 E., corner of secs. 19, 20, 29, 30, center of crossroads	36 52 58.4	97 00 49.0	2,635
T. 28 N., R. 3 E., corner of secs. 17, 18, 19, and 20, crossroads	36 52 50.5	97 00 49.2	5,270
T. 28 N., R. 3 E., corner of secs. 7, 8, 17, and 18, center of crossroads	36 54 42.7	97 00 49.1	5,275
T. 28 N., R. 3 E., corner of secs. 5, 6, 7, and 8, at district 11 schoolhouse, center of crossroads	36 55 34.7	97 00 48.4	5,260
T. 28 N., R. 3 E., closing corner of secs. 5 and 6, T road south on township line	36 56 28.1	97 00 47.1	5,407
T. 29 N., R. 3 E., corner of secs. 31 and 32, on township line	36 56 28.1	97 00 41.2	479
T. 29 N., R. 3 E., quarter corner between secs. 31 and 32, at east-west fence line; stone corner	36 56 54.1	97 00 41.2	2,630
T. 29 N., R. 3 E., corner of secs. 29, 30, 31, and 32, at schoolhouse 78, center of crossroads	36 57 20.3	97 00 41.2	2,640
T. 29 N., R. 3 E., quarter corner between secs. 29 and 30, at east-west fence line: stone corner	36 57 46.3	97 00 41.2	2,635
T. 29 N., R. 3 E., corner of secs. 19, 20, 29, and 30, center of cross-roads	36 58 12.4	97 00 41.1	2,635
T. 29 N., R. 3 E., corner of secs. 17, 18, 19, and 20, center of cross-roads	36 59 04.8	97 00 41.5	5,297
T. 29 N., R. 3 E., quarter corner between secs. 17 and 18, east-west fence line; stone corner	36 59 30.7	97 00 41.7	2,623
T. 29 N., R. 3 E., north corner of secs. 17 and 18, at T road south, 22 feet south of Kansas-Oklahoma State line, 3 feet south of stone corner post; iron post stamped "Prim. Trav. Sta. No. 17, 1916"	36 59 55.5	97 00 42.2	2,508

Magnetic declination along east border of quadrangle (north half), 10° 04′ E.

NEWKIRK QUADRANGLE—Continued.

Along highways near east border of quadrangle (south half).

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 26 N., R. 3 E., corner of secs. 7, 8, 17, and 18; stone corner at cross-roads	36 44 17.5	97 00 48.4	
T. 26 N., R. 3 E., quarter corner between secs. 17 and 18; stone at T road west	36 43 51.6	97 00 48.4	2,627
T. 26 N., R. 3 E., corner of secs. 17, 18, 19, and 20; stone at crossroads	36 43 25.6	97 00 48.4	2,631
T. 26 N., R. 3 E., quarter corner between secs. 19 and 20, at Oak View schoolhouse, center of road at east-west fence line	36 42 59.6	97 00 48.3	2,622
T. 26 N., R. 3 E., corner of secs. 19, 20, 29, and 30, crossroads	36 42 33.8	97 00 48.2	2,614
T. 26 N., Rs. 2 and 3 E., corner of secs. 19, 24, 25, and 30, T road north	36 42 33.3	97 01 52.4	5,230
T. 26 N., R. 2 E., quarter corner between secs. 24 and 25, center of road at north-south fence line	36 42 33.1	97 02 24.5	2,615
T. 26 N., R. 2 E., corner of secs. 23, 24, 25, and 26, T road south at fence line north	36 42 33.0	97 02 57.0	2,645
Road forks at west end of small bridge, 415 feet northwest of Arkansas River	36 41 43.7	97 03 05.9	5,026

Along highways near east border of quadrangle (north half).

T. 26 N., R. 2 E., southeast end of Arkansas River bridge, 1.75 miles southeast of Ponca City	36 41 34.9	97 02 57.6	1,125
T. 26 N., R. 2 E., quarter corner between secs. 35 and 36, center of north-south road at T road east	36 41 15.9	97 02 57.0	1,920
T. 26 N., R. 2 E., center of sec. 36, center of east-west road at north-south fence line	36 41 15.8	97 02 24.8	2,621
T. 26 N., Rs. 2 and 3 E., quarter corner between secs. 36 and 31, center of east-west road at fence line north	36 41 15.5	97 01 52.1	2,665
T. 26 N., R. 3 E., center of sec. 31, T road west	36 41 15.6	97 01 20.0	2,610
Tps. 25 and 26 N., R. 3 E., quarter corner between secs. 6 and 31, crossroads	36 40 49.8	97 01 20.2	2,614
Tps. 25 and 26 N., Rs. 2 and 3 E., corner of secs. 1, 6, 31, and 36, center of east-west road at T road south, 26 feet west of T fence line; General Land Office iron post	36 40 49.6	97 01 52.4	2,610
T. 25 N., R. 3 E., quarter corner between secs. 6 and 7, T road west	36 39 57.8	97 01 20.3	5,239
T. 25 N., R. 3 E., center of sec. 7, T road east	36 39 32.6	97 01 19.8	2,560
T. 25 N., R. 3 E., quarter corner between secs. 7 and 8; iron stake	36 39 32.2	97 00 47.9	2,598
T. 25 N., R. 3 E., corner of secs. 7, 8, 17, and 18	36 39 06.3	97 00 47.8	2,625
T. 25 N., R. 3 E., quarter corner between secs. 8 and 17, T road south; iron stake	36 39 06.0	97 00 15.4	2,638
T. 25 N., R. 3 E., quarter corner between secs. 17 and 20, center of road, east-west fence line	36 38 14.2	97 00 15.2	5,247
T. 25 N., R. 3 E., center of sec. 20, 15 feet north of T road east, in line with fence east and west on west side of road, 1½ feet from fence post; iron post stamped "Prim. Trav. Sta. No. 23, 1916"	36 37 47.8	97 00 15.4	2,663
T road west	36 37 02.5	97 00 15.2	4,589
T. 25 N., R. 3 E., quarter corner between secs. 29 and 32	36 36 29.7	97 00 15.5	3,320
T. 25 N., R. 3 E., apparent corner of secs. 29, 30, 31, and 32; stone in center of east-west road at T fence south	36 36 29.8	97 00 47.1	2,576
T. 25 N., R. 3 E., north corner of secs. 5 and 6, in Arkansas River bottom, one-half mile north of Arkansas River, 20 feet west by 25 feet south of end post of fence line east, General Land Office iron stake	36 35 37.7	97 00 52.7	5,285
T. 24 N., R. 3 E., quarter corner between secs. 8 and 17; stone at four corners of fences	36 33 52.7	97 00 19.7	
T. 24 N., R. 3 E., center of sec. 17; stone at four corners of fences	36 33 26.9	97 00 19.0	2,610
T. 24 N., R. 3 E., quarter corner between secs. 17 and 20, at J. E. Alexander's residence, center of east-west road at fence line north-south	36 33 00.8	97 00 19.5	2,640
T. 24 N., R. 3 E., quarter corner between secs. 20 and 29; stone at center of east and west road at fences north and south	36 32 08.6	97 00 19.5	5,279

Magnetic declination for east border of quadrangle, 10° 30′ E., south half of SW. ¼ of quadrangle; for east border of quadrangle, 10° 25′ E., north half of SW. ¼ of quadrangle.

NOWATA QUADRANGLE.

Near southwest corner of quadrangle. (By B. H. Yoakum in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 23 N., R. 12 E., near northeast corner of sec. 2, road corner	36 30 24.7	95 59 12.8	

PAWHUSKA QUADRANGLE.

North along highways near west border of quadrangle. (By W. F. Hicks in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 25 N., Rs. 7 and 8 E., 4 feet north of quarter corner of secs. 19 and 24; iron post stamped "Prim. Trav. Sta. No. 10, 1916." Elev. 1,071 feet	36 37 47.1	96 29 35.3	.....
T. 25 N., Rs. 7 and 8 E., corner of secs. 13, 18, 19, and 24; iron stake with cap	36 38 13.2	96 29 35.1	2,648
T. 25 N., Rs. 7 and 8 E., quarter corner between secs. 13 and 18; iron stake with cap	36 38 39.4	96 29 34.6	2,649
T. 25 N., Rs. 7 and 8 E., corner of secs. 7, 12, 13, and 18; iron stake with cap	36 39 05.5	96 29 34.5	2,640
T. 25 N., Rs. 7 and 8 E., corner of secs. 1, 6, 7, and 12; iron stake with cap	36 39 57.9	96 29 34.1	5,294
T. 25 N., Rs. 7 and 8 E., quarter corner between secs. 1 and 6; iron stake with cap	36 40 24.1	96 29 33.9	2,648
Tps. 25 and 26 N., Rs. 7 and 8 E., corner of secs. 1, 6, 31, and 36; General Land Office, iron post stamped "Elev. 1,018"	36 40 50.2	96 29 33.7	2,647
T. 26 N., Rs. 7 and 8 E., quarter corner between secs. 31 and 36; iron stake with cap	36 41 16.5	96 29 33.1	2,653
T. 26 N., Rs. 7 and 8 E., corner of secs. 25, 30, 31, and 36; iron stake with cap	36 41 42.6	96 29 32.6	2,642
T. 26 N., Rs. 7 and 8 E., quarter corner between secs. 25 and 30; iron stake with cap	36 42 08.8	96 29 32.3	2,652
T. 26 N., Rs. 7 and 8 E., corner of secs. 19, 24, 25, and 30; iron stake with cap	36 42 35.0	96 29 32.0	2,647
T. 26 N., Rs. 7 and 8 E., quarter corner between secs 119 and 24; iron stake with cap	36 43 01.2	96 29 32.0	2,650
T. 26 N., Rs. 7 and 8 E., 1.4 feet north of corner of secs. 13, 18, 19, and 24; stamped "Prim. Trav. Sta. No. 11, 1916." Elev. 1,040 feet	36 43 27.4	96 29 32.0	2,651

East along south border of quadrangle. (By W. F. Hicks in 1916.)

T. 23 N., R. 8 E., near line between secs. 2 and 3, 50 feet east of road fork, 150 feet west of north and south fence; nail in root of 15-inch hickory tree	36 30 03.6	96 25 32.0	.....
T. 23 N., R. 8 E., in sec. 2, road fork	36 30 08.0	96 24 56.4	2,945
Road forks	36 30 16.0	96 24 43.9	1,302
Tps. 23 and 24 N., R. 8 E., corner of secs. 1, 2, 35, and 36	36 30 23 4	96 24 26.6	1,601
Tps. 23 and 24 N., R. 8 E., quarter corner between secs. 1 and 36	36 30 23.4	96 23 54.4	2,630
Tps. 23 and 24 N., Rs. 8 and 9 E., at township corner, 20 feet west of intersection of crossroads	36 30 23.4	96 23 22.1	2,641
Tps. 23 and 24 N., R. 9 E., in sec. 5, T road south from township line and along west side of Missouri, Kansas & Texas Ry	36 30 23.0	96 21 54.0	7,192
Tps. 23 and 24 N., R. 9 E., at quarter corner between secs. 5 and 32, 750 feet east of Missouri, Kansas & Texas Ry.; iron post stamped "Prim. Trav. Sta. No. 71, 1916. Elev. 823"	36 30 23.1	96 21 44.0	821
Center of road at section-line fence north and south	36 30 21.8	96 21 10.4	2,742
T. 23 N., R. 9 E., in sec. 2, road forks	36 30 23.8	96 18 35 2	12,675
Tps. 23 and 24 N., R. 12 E., east closing corner of secs. 3 and 34, 150 feet north of gate on east and west road, 25 feet west of north and south phone line; General Land Office post stamped "Prim. Trav. Sta. No. 77, 1916"	36 30 23.6	96 00. 03.3	.....

PRAGUE QUADRANGLE.

(By B. H. Yoakum in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Paden, 3 miles east and 0.7 mile south of, 957 feet south of quarter corner between secs. 19 and 24, T. 12 N., Rs. 7 and 8 E., 38 feet north by 30 feet east of Fort Smith & Western R. R. crossing, 3 feet southwest of corner fence post of railroad property line fence; iron post stamped "Prim. Trav. Sta. No. 44, 1916"	35 29 52.1	96 30 42.0	.....

SAC AND FOX QUADRANGLE.

Along highways south through center of quadrangle. (By B. H. Yoakum in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
St. Louis-San Francisco Ry. crossing	35 44 41.2	96 37 36.6	
T. 15 N., R. 6 E., corner of secs. 25, 26, 35, and 36, crossroads	35 44 19.4	96 37 36.9	2,198
Tps. 14 and 15 N., R. 6 E., corner of secs. 1, 2, 35, and 36, crossroads	35 43 27.3	96 37 38.0	5,260
T. 14 N., R. 6 E., corner of secs. 1, 2, 11, and 12, crossroads	35 42 34.9	96 37 36.9	5,285
T. 14 N., R. 6 E., east corner of secs. 1 and 12, T road west	35 42 34.9	96 37 12.6	1,993
Cox triangulation station, 2,400 feet south and 500 feet east of closing corner of Oklahoma-Indian Territory boundary line. Said closing corner is on line between secs. 1 and 12, T. 14 N., R. 6 E. Station mark: A 20-inch post-oak tree having branches and top cut off. Theodolite elevated 30 feet	35 42 11.36	96 37 06.51	2,428
T road west	35 41 43.1	96 37 11.1	2,881
Road southwest	35 41 30.1	96 37 11.6	1,318
Road east	35 40 58.4	96 37 08.4	3,215
T. 14 N., R. 6 E., corner of secs. 13, 14, 23, and 24, T road south	35 40 49.8	96 37 36.3	2,457
T. 14 N., R. 6 E., corner of secs. 23, 24, 25, and 26, crossroads	35 39 56.5	96 37 36.3	5,393
Deep Fork of Canadian River, center of steel bridge over	35 39 57.2	96 38 17.4	3,395
Sac and Fox Agency, 1 mile east of, 44 feet north by 18 feet west of corner of secs. 22, 23, 26, and 27, T. 14 N., R. 6 E., at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 41, 1916"	35 39 57.4	96 38 40.0	1,868
T. 14 N., R. 6 E., corner of secs. 26, 27, 34, and 35, crossroads	35 39 04.4	96 38 40.0	5,359
Tps. 13 and 14 N., R. 6 E., 580 feet north of corner of secs. 2, 3, 34, and 35, in road outcrop, in center of north and south road; aluminum tablet stamped "Prim. Trav. Sta. No. 42, 1916. Elev. 823"	35 38 17.3	96 38 39.6	4,761
Tps. 13 and 14 N., R. 6 E., corner of secs. 1, 2, 35, and 36, T road south	35 38 10.7	96 37 35.5	5,355
Tps. 13 and 14 N., R. 6 E., east corner of secs. 1 and 36, corner of Creek-Okfuskee counties on Lincoln county line; iron post stamped with Land Office numbers. Elev. 788	35 38 20.1	96 37 14.0	1,977
T. 13 N., R. 6 E., corner of secs. 1, 2, 11, and 12, crossroads	35 37 19.6	96 37 36.4	6,394
T. 13 N., R. 6 E., corner of secs. 11, 12, 13, and 14, center of north and south road on line with road east	35 36 28.2	96 37 37.1	5,190
T. 13 N., R. 6 E., corner of secs. 13, 14, 23, and 24, crossroads	35 35 35.9	96 37 37.6	5,294
T. 13 N., R. 6 E., corner of secs. 23, 24, 25, and 26, crossroads	35 34 44.3	96 37 37.5	5,220
T. 13 N., R. 6 E., corner of secs. 25, 26, 35, and 36, crossroads	35 33 52.4	96 37 38.1	5,248
T. 13 N., R. 6 E., south corner of secs. 35 and 36, T road north	35 33 00.2	96 37 38.0	5,278
Tps. 12 and 13 N., R. 6 E., east corner of secs. 1 and 36, on Lincoln-Okfuskee county line; iron post stamped with Land Office numbers. Elev. 867	35 33 06.8	96 37 17.9	1,784
T. 12 N., R. 6 E., stone quarter corner between secs. 1 and 2, at east and west fence line	35 32 32.8	96 37 47.5	4,220
T. 12 N., R. 6 E., corner of secs21, 2, 11, and 12, T road west, 125 feet south of T road east	35 32 06.8	96 37 47.6	2,625
T. 12 N., R. 6 E., corner of secs. 11, 12, 13, and 14, crossroads	35 31 14.5	96 37 48.2	5,287
T. 12 N., R. 6 E., corner of secs. 13, 14, 23, and 24, crossroads	35 30 22.6	96 37 49.0	5,257
Prague, 3 miles east by 1.5 miles north of, 1,043 feet south of corner of secs. 13, 14, 23, and 24, T. 12 N., R. 6 E., 36 feet north by 33 feet west of Fort Smith & Western R. R. crossing, 3 feet east of property line fence; iron post stamped "Prim. Trav. Sta. No. 43, 1916"	35 30 12.3	96 37 49.4	1,043

East along highways and Fort Smith & Western R. R. near south border of quadrangle.

T. 12 N., R. 7 E., railroad crossing on line between secs. 17 and 18	35 30 53.6	96 36 01.5	9,852
T. 12 N., R. 7 E., railroad crossing, 395 feet west of corner of secs. 16, 17, 20, and 21	35 30 28.3	96 35 02.5	5,508
T. 12 N., R. 7 E., corner of secs. 16, 17, 20, and 21, crossroads	35 30 28.3	96 34 57.7	395
T. 12 N., R. 7 E., corner of secs. 15, 16, 21, and 22, cross streets at Baptist Church at Paden	35 30 28.3	96 33 54.2	5,245
Railroad trestle 150.3, over center of road	35 30 28.1	96 33 30.8	1,939
Railroad trestle 149.7, center of	35 30 23.1	96 32 56.2	2,902
Railroad trestle 149.4, center of	35 30 17.2	96 32 37.7	1,644
Railroad trestle 148.8, east end of	35 30 01.2	96 32 07.2	2,997
T. 12 N., R. 7 E., railroad crossing on line between secs. 23 and 24	35 30 00.3	96 31 46.3	1,737

SAC AND FOX QUADRANGLE—Continued.

North along highways near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 12 N., Rs. 7 and 8 E., corner of secs. 13, 18, 19, and 24, cross-roads	35 30 27.7	96 30 42.4	.....
T. 12 N., Rs. 7 and 8 E., corner of secs. 7, 12, 13, and 18; stone at second-class road east, in line with road west	35 31 20.0	96 30 42.4	5,286
T. 12 N., Rs. 7 and 8 E., corner of secs. 1, 6, 7, and 12, crossroads	35 32 12.2	96 30 42.4	5,284
T. 12 N., Rs. 7 and 8 E., north corner of secs. 1 and 6; stone at crossroads	35 33 07.3	96 30 42.5	5,566
T. 13 N., Rs. 7 and 8 E., south corner of secs. 31 and 36; iron post stamped with Land Office numbers, "Prim. Trav. Sta. No. 45, 1916." Elev. 862	35 33 07.3	96 30 44.4	153
T. 13 N., Rs. 7 and 8 E., quarter corner between secs. 31 and 36, T road west	35 33 33.4	96 30 44.4	2,636
T. 13 N., Rs. 7 and 8 E., stone corner of secs. 25, 30, 31, and 36, crossroads	35 33 59.6	96 30 44.4	2,643
T. 13 N., Rs. 7 and 8 E., at fence west, stone corner between secs. 19 and 24	35 35 17.8	96 30 44.4	7,910
T. 13 N., Rs. 7 and 8 E., stone corner of secs. 7, 12, 13, and 18, crossroads	35 36 36.1	96 30 44.3	7,914
T. 13 N., Rs. 7 and 8 E., corner of secs. 1, 6, 7, and 12, crossroads	35 37 28.3	96 30 44.2	5,280
Micawber, 1 mile north by 0.25 mile west of, at corner of secs. 1, 6, 31, and 36, Tps. 13 and 14 N., Rs. 7 and 8 E., in center of crossroads; iron post stamped with Land Office numbers, also elev. 773 and "Prim. Trav. Sta. No. 46, 1916"	35 38 20.5	96 30 44.1	5,278
T. 14 N., Rs. 7 and 8 E., corner of secs. 19, 24, 25, and 30, crossroads	35 40 05.2	96 30. 44.1	10,580
T. 14 N., Rs. 7 and 8 E., quarter corner between secs. 19 and 24; stone at fence east	35 40 31.2	96 30 44.1	2,629
T. 14 N., Rs. 7 and 8 E., stone corner of secs. 13, 18, 19, and 24, T road west	35 40 57.4	96 30 44.0	2,652
T. 14 N., Rs. 7 and 8 E., quarter corner between secs. 13 and 18, crossroads	35 41 23.6	96 30 43.9	2,643
T. 14 N., Rs. 7 and 8 E., corner of secs. 7, 12, 13, and 18, crossroads	35 41 49.7	96 30 44.0	2,640
Salt Creek, center of bridge over	35 42 40.6	96 30 46.2	5,149
Tps. 14 and 15 N., Rs. 7 and 8 E., corner of, in center of crossroads; iron post stamped with Land Office numbers, elev. 765, Prim. Trav. Sta. No. 47, 1916	35 43 34.4	96 30 43.6	5,446
T. 15 N., Rs. 7 and 8 E., quarter corner between secs. 31 and 36; iron pipe at fence east	35 43 57.6	96 30 43.7	2,346
T. 15 N., Rs. 7 and 8 E., corner of secs. 25, 30, 31, and 36, at Prairie View schoolhouse; crossroads	35 44 26.8	96 30 43.6	2,944
T. 15 N., Rs. 7 and 8 E., quarter corner between secs. 25 and 30	35 44 52.9	96 30 43.7	2,645

West along highways through center of quadrangle.

T. 13 N., R. 7 E., corner of secs. 1, 2, 11, and 12, center of east and west road at north and south fence line	35 37 28.5	96 31 48.1	.....
T. 13 N., R. 7 E., quarter corner between secs. 2 and 11; stone at north and south fence line	35 37 28.5	96 32 20.2	2,652
T. 13 N., R. 7 E., corner of secs. 2, 3, 10, and 11, crossroads	35 37 28.6	96 32 52.1	2,637
T road north, 75 feet east of T road south	35 37 29.1	96 33 55.9	5,268
T. 13 N., R. 7 E., quarter corner between secs. 4 and 9, 10 feet west of crossroads	35 37 28.9	96 34 28.3	2,673
T. 13 N., R. 7 E., stone corner of secs. 4, 5, 8, and 9, T road south	35 37 28.6	96 35 00.2	2,635
T. 13 N., R. 7 E., stone quarter corner between secs. 5 and 8, T road north	35 37 28.5	96 35 32.2	2,644
T. 13 N., R. 7 E., stone corner of secs. 5, 6, 7, and 8, crossroads	35 37 28.2	96 36 04.2	2,642
T. 13 N., R. 7 E., quarter corner between secs. 6 and 7, center of east and west road, in line with T road north	35 37 27.0	96 36 36.1	2,638
Okfuskee-Creek county line, stone marked for old Oklahoma-Indian Territory boundary line, on north side of angling road, in line with road east on line between secs. 6 and 7, T. 13 N., R. 7 E.	35 37 27.9	96 37 15.0	3,218

Magnetic declination north and south through center of quadrangle, 10° 06′ E.; for south border of quadrangle, 9° 52′ E.; for east border of quadrangle, 10° 44′ E.; east and west through center of quadrangle, 10° 11′ E.

SKEDEE QUADRANGLE.

South along highways near west border of quadrangle. (By B. H. Yoakum in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 44, opposite, center of Atchison, Topeka & Santa Fe Ry. track	36 29 43.1	96 43 53.5	.....
Road crossing east-west	36 29 33.4	96 43 49.8	1,035
T. 23 N., R. 5 E., section line between secs. 11 and 12, center of crossroads	36 29.11.7	96 43 41.4	2,294
T. 23 N., R. 5 E., corner of secs. 11, 12, 13, and 14, crossroads	36 28 41.1	96 43 41.2	3,091
T. 23 N., R. 5 E., corner of secs. 13, 14, 23, and 24; stone at T road west	36 27 49.0	96 43 41.3	5,265
T. 23 N., R. 5 E., quarter corner between secs. 23 and 24, T road east; stone	36 27 23.0	96 43.41.3	2,636
T. 23 N., R. 5 E., corner of secs. 23, 24, 25, and 26, near T road west	36 26 56.8	96 43 41.7	2,643
Coal Creek, center of small iron bridge over	36 26 44.4	96 43 41.7	1,258
T. 23 N., R. 5 E., corner of secs. 25, 26, 35, and 36, crossroads	36 26 04.7	96 43 41.5	4,015
Tps. 22 and 23 N., R. 5 E., corner of secs. 1, 2, 35, and 36, Spring Creek schoolhouse, crossroads	36 25 12.6	96 43 41.2	5,265
T. 22 N., R. 5 E., corner of secs. 1, 2, 11, and 12, center of crossroads	36 24 20.2	96 43 41.2	5,300
T. 22 N., R. 5 E., corner of secs. 11, 12, 13, and 14, in northwest angle of road forks; iron post stamped "Prim. Trav. Sta. No. 27, 1916"	36 23 28.3	96 43 42.1	5,252
T. 22 N., R. 5 E., corner of secs. 10, 11, 14, and 15, center of cross-roads	36 23 28.4	96 44 45.7	5,199
T. 22 N., R. 5 E., corner of secs. 14, 15, 22, and 23, center of cross-roads	36 22 36.1	96 44 46.2	5,286
T. 22 N., R. 5 E., corner of secs. 22, 23, 26, and 27; stone at sharp turn in road	36 21 44.1	96 44 46.1	5,260
T. 22 N., R. 5 E., quarter corner between secs. 26 and 27, center of crossroads	36 21 17.8	96 44 46.8	2,654
T. 22 N., R. 5 E., corner of secs. 26, 27, 34, and 35, in bottom north of Black Bear Creek, center of T road west	36 20 51.8	96 44 46.1	2,630
Tps. 21 and 22 N., R. 5 E., apparent corner of secs. 2, 3, 34, and 35, crossroads	36 19 59.5	96 44 46.3	5,295
T. 21 N., R. 5 E., quarter corner between secs. 2 and 3, on west side of north-south road, at fence line east; stone	36 19 33.2	96 44 46.4	2,655
T. 21 N., R. 5 E., corner of secs. 2, 3, 10, and 11, on north side of east-west road, at T road south; stone	36 19 07.1	96 44 46.5	2,639
T. 21 N., R. 5 E., on line between secs. 10 and 11, near telegraph pole marked "473.20," St. Louis-San Francisco Ry., second-class road crossing	36 18 23.2	96 44 46.7	4,442
T. 21 N., R. 5 E., corner of secs. 10, 11, 14, and 15, crossroads	36 18 15.2	96 44 47.1	811
T. 21 N., R. 5 E., corner of secs. 14, 15, 22, and 23, center of cross-roads	36 17 23.1	96 44 47.0	5,263
T. 21 N., R. 5 E., corner of secs. 22, 23, 26, and 27, at T road south, in center of east-west road; stone	36 16 31.1	96 44 46.3	5,260
T. 21 N., R. 5 E., corner of secs. 26, 27, 34, and 35, center of cross-roads	36 15 39.5	96 44 46.3	5,220
Near east border of quadrangle.			
Souter Bend ferry, on north bank of Arkansas River, triangle at road forks	36 18 32.4	96 30 16.0	.....
On road in northeast corner of quadrangle.			
T. 23 N., R. 7 E., quarter corner between secs. 1 and 12, in pile of rocks on west side of road; iron stake with cap	36 29 32.6	96 30 18.8	5,963

Magnetic declination for west border of quadrangle, 9° 55′ E.

SKEDEE QUADRANGLE—Continued.

West along highways through center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 22 N., R. 7 E., quarter corner between secs. 1 and 12; iron stake with cap	36 24 19.4	96 30 18.8	2,636
T. 22 N., R. 7 E., corner of secs. 1, 2, 11, and 12, T road south at schoolhouse	36 24 19.6	96 30 51.0	2,625
T. 22 N., R. 7 E., quarter corner between secs. 2 and 11, center of east and west road at gate; iron stake	36 24 20.4	96 31 23.3	2,643
T. 22 N., R. 7 E., quarter corner between secs. 3 and 10, 500 feet northeast of residence of Henry King, on east hillside on south side of road, 15 feet east of hickory tree; iron stake with cap	36 24 21.7	96 32 27.5	5,250
T. 22 N., R. 7 E., corner of secs. 3, 4, 9, and 10, on west side of ridge west of Big Creek, center of east-west double fence line, at fences north and south, iron stake with cap	36 24 22.1	96 32 59.5	2,618
T. 22 N., R. 7 E., quarter corner between secs. 4 and 9; iron stake with cap	36 24 22.2	96 33 31.9	2,648
T. 22 N., R. 7 E., corner of secs. 4, 5, 8, and 9, at T road west; iron stake with cap	36 24 22.6	96 34 04.0	2,623
T. 22 N., R. 7 E., quarter corner between secs. 5 and 8, center of east and west road at fence line north; iron stake with cap	36 24 22.8	96 34 36.1	2,631
T. 22 N., R. 7 E., apparent corner of secs. 5, 6, 7, and 8, at South Enterprise schoolhouse, T road east	36 24 22.4	96 35 08.1	2,616
T. 22 N., R. 7 E., corner of secs. 7, 8, 17, and 18, T road east; iron stake with cap	36 23 30.8	96 35 08.1	5,220
T. 22 N., R. 7 E., quarter corner between secs. 17 and 18, center of north-south road; iron stake with cap	36 23 04.8	96 35 08.2	2,627
T. 22 N., R. 7 E., corner of secs. 17, 18, 19, and 20, T road north; iron stake with cap	36 22 38.9	96 35 08.2	2,627
Blackburn, at T road to ferry, on north bank of Arkansas River, 230 feet east of north end of bridge	36 22 40.0	96 35 29.5	1,742
Blackburn, west of post office, center of cross street	36 22 22.5	96 35 44.3	2,149
T. 22 N., Rs. 6 and 7 E., corner of secs. 13, 18, 19, and 24, center of T road west; iron post stamped "Prim. Trav. Sta. No. 31, 1916"	36 22 36.7	96 36 06.7	2,331
T. 22 N., R. 6 E., corner of secs. 13, 14, 23, and 24, crossroads; stone with cross	36 22 37.4	96 37 12.0	5,343
T. 22 N., R. 6 E., corner of secs. 14, 15, 22, and 23, at crossroads, small wooden bridge; stone with cross cut in top	36 22 37.4	96 38 16.8	5,294
T. 22 N., R. 6 E., corner of secs. 15, 16, 21, and 22, center of cross-roads	36 22 37.0	96 39 21.6	5,297
T. 22 N., R. 6 E., corner of secs. 16, 17, 20, and 21, crossroads: stone	36 22 36.3	96 40 26.3	5,295
T. 22 N., R. 6 E., corner of secs. 17, 18, 19, and 20, crossroads; stone	36 22 36.0	96 41 31.3	5,322
Skedee, on west side of track at station, at southeast corner of hotel porch, 2 feet northeast of concrete foundation post; iron post stamped "Prim. Trav. Sta. No. 32, 1916. Elevation 834 feet"	36 22 44.0	96 42 10.4	3,291
T. 22 N., Rs. 5 and 6 E., T road forks at section line, 0.4 mile west of Skedee	36 22 47.4	96 42 37.1	2,207
T. 22 N., Rs. 5 and 6 E., near corner of secs. 7, 12, 13, and 18, at T road west	36 23 27.1	96 42 37.7	4,020

Magnetic declination through center of quadrangle, 9° 40′ E.

YALE QUADRANGLE.

East along highways near north border of quadrangle. (By B. H. Yoakum in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 21 N., R. 5 E., south corner of secs. 34 and 35, 40 feet southeast of T road north, on south side of east-west road, in line with fence north; iron post stamped "Prim. Trav. Sta. No. 28, 1916"	36 14 46.7	96 44 46.0	.....
T. 21 N., R. 5. E., quarter corner on south side of sec. 35 at fence line north; stone	36 14 47.0	96 44 14.3	2,602
T. 20 N., R. 5 E., north corner of secs. 1 and 2, T road south	36 14 46.9	96 43 48.3	2,125
T. 20 N., Rs. 5 and 6 E., north corner of secs. 1 and 6, T road south	36 14 46.8	96 42 44.2	5,255
T. 21 N., Rs. 5 and 6 E., south corner of secs. 31 and 36, at T road north; cross cut in stone	36 14 46.8	96 42 38.0	510
T. 20 N., R. 6 E., north corner of secs. 5 and 6, T road south	36 14 46.8	96 41 43.3	4,475
T. 21 N., R. 6 E., south corner of secs. 31 and 32, T road north	36 14 46.8	96 41 33.7	790
T. 21 N., R. 6 E., quarter corner on south side of sec. 32, 150 feet east of road crossing of Atchison, Topeka & Santa Fe Ry. at Mermec, in northwest corner of crossroads; stone with cross cut in top	36 14 46.7	96 41 01.4	2,642
T. 20 N., R. 6 E., north corner of secs. 4 and 5, T road south	36 14 46.5	96 40 38.6	1,873
T. 21 N., R. 6 E., south corner of secs. 32 and 33, T road north	36 14 46.4	96 40 29.3	765

YALE QUADRANGLE—Continued.

East along highways near north border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 21 N., R. 6 E., south corner of secs. 33 and 34, T road north	36 14 46.7	96 39 24.9	5,270
T. 20 N., R. 6 E., north corner of secs. 2 and 3, T road north	36 14 46.7	96 38 30.3	4,474
T. 21 N., R. 6 E., south corner of secs. 34 and 35, T road north	36 14 46.7	96 38 20.9	770
T. 20 N., R. 6 E., north corner of secs. 1 and 2, in southeast angle of road forks; iron post stamped "Prim. Trav. Sta. No. 29, 1916"	36 14 46.4	96 37 25.5	4,542
T. 21 N., R. 6 E., south corner of secs. 35 and 36, T road north	36 14 46.6	96 37 16.4	740
T. 21 N., Rs. 6 and 7 E., secs. 31 and 36 on south side of east-west road at T road north; stone with cross cut in top	36 14 51.1	96 36 12.2	5,277
T. 20 N., R. 7 E., north corner of secs. 5 and 6, at T road south; stone with cross cut in top	36 14 46.4	96 35 19.7	4,328
T. 21 N., R. 7 E., south corner of secs. 31 and 32, at T road north; stone	36 14 46.3	96 35 08.1	955
Hallett, northwest of; about 600 feet north of water tank; road crossing St Louis-San Francisco Ry	36 14 46.4	96 34 49.6	1,518
T. 20 N., R. 7 E., north corner of secs. 4 and 5, T road south to Hallett	36 14 46.2	96 34 15.6	2,785
T. 21 N., R. 7 E., south corner of secs. 32 and 33, T road north	36 14 46.3	96 34 03.8	960
Hallett, water tower, ball on top of	36 13 43.0	96 33 55.8	6,434
T. 20 N., R. 7 E., north corner of secs. 3 and 4, T road south	36 14 46.3	96 33 10.9	7,377
T. 21 N., R. 7 E., south corner of secs. 33 and 34, T road north	36 14 46.3	96 32 59.4	941
T. 20 N., R. 7 E., north corner of secs. 2 and 3, T road south	36 14 46.2	96 32 06.3	4,350
T. 21 N., R. 7 E., south corner of secs. 34 and 35, T road north	36 14 46.3	96 31 55.0	932

Magnetic declination for north border of quadrangle, 9° 33′ E.

South along highways near west border of quadrangle.

T. 20 N., R. 5 E., corner of secs. 2, 3, 10, and 11, crossroads; stone	36 13 54.5	96 44 52.0	5,306
T. 20 N., R. 5 E., corner of secs. 10, 11, 14, and 15, center of cross-roads	36 13 02.3	96 44 52.6	5,278
T. 20 N., R. 5 E., corner of secs. 14, 15, 22, and 23, at crossroads; stone	36 12 10.2	96 44 53.0	5,261
T. 20 N., R. 5 E., corner of secs. 22, 23, 26 and 27, center of cross-roads at Lone Elm schoolhouse	36 11 17.9	96 44 53.3	5,291
T. 20 N., R. 5 E., corner of secs. 26, 27, 34, and 35, center of east and west road at T road north	36 10 25.9	96 44 53.6	5,261
Tps. 19 and 20 N., R. 5 E., corner of secs. 2, 3, 34, and 35, crossroads; stone	36 09 33.6	96 44 54.5	5,287
T. 19 N., R. 5 E., corner of secs. 2, 3, 10, and 11, crossroads; stone	36 08 41.5	96 44 55.6	5,274
T. 19 N., R. 5 E., near corner of secs. 10, 11, 14, and 15, 57 feet south of T road, in northwest corner of T fence west, 2 feet northwest of corner fence post; iron post stamped "Prim. Trav. Sta. No. 33, 1916"	36 07 48.9	96 44 57.2	5,315
T. 19 N., R. 5 E., corner of secs. 11, 12, 13, and 14, crossroads; stone	36 07 49.6	96 43 53.8	5,200
T. 19 N., Rs. 5 and 6 E., corner of secs. 7, 12, 13, and 18, center of crossroads	36 07 49.9	96 42 48.3	5,378
T. 19 N., Rs. 5 and 6 E., corner of secs. 13, 18, 19, and 24, crossroads 1 mile west of Yale; stone	36 06 57.7	96 42 49.2	5,283
T. 19 N., Rs. 5 and 6 E., quarter corner between secs. 19 and 24, at T road east; stone	36 06 31.5	96 42 49.3	2,642
T. 19 N., Rs. 5 and 6 E., corner of secs. 19, 24, 25, and 30, center of crossroads	36 06 05.5	96 42 49.8	2,635
Cimarron River, 2.5 miles southwest of Yale, north end of wagon bridg	36 05 43.4	96 42 49.8	2,234
Cimarron River, 2.5 miles southwest of Yale, south end of wagon bridge	36 05 03.3	96 42 49.4	1,326
T. 19 N., Rs. 5 and 6 E., corner of secs. 25, 30, 31, and 36, at cross-roads; stone	36 05 14.3	96 42 49.7	1,612
Tps. 18 and 19 N., Rs. 5 and 6 E., corner of secs. 1, 6, 31, and 36, center of crossroads	36 04 21.9	96 42 49.9	5,302
Tps. 18 and 19 N., R. 5 E., corner of secs. 1, 2, 35, and 36, at T road east; stone	36 04 21.7	96 43 54.1	5,264
T. 18 N., R. 5 E., corner of secs. 1, 2, 11, and 12, center of crossroads	36 03 29.3	96 43 54.3	5,294
T. 18 N., R. 5 E., corner of secs. 11, 12, 13, and 14, center of cross-roads, 140 feet north of Santa Fe Ry. crossing at milepost 77	36 02 37.2	96 43 54.5	5,277
T. 18 N., R. 5 E., corner of secs. 10, 11, 14, and 15, center of cross-roads	36 02 37.3	96 44 58.7	5,270
T. 18 N., R. 5 E., corner of secs. 14, 15, 22, and 23, at Wagoza school-house, center of crossroads	36 01 45.0	96 44 58.6	5,288
Santa Fe Ry. crossing at Chanute Oil Refining Co	36 01 09.3	96 44 58.7	3,615
T. 18 N., R. 5 E., corner of secs. 22, 23, 26, and 27, 22 feet north by 5 feet west of crossroads, 350 feet south of Mo. Kans. & Texas Ry. crossing at Ganosiding, 27 miles northeast of Cushing; iron post stamped "Prim. Trav. Sta. No. 34, 1916. Elevation 826 feet Okla"	36 00 53.0	96 44 58.8	1,645
T. 18 N., R. 5 E., corner of secs. 26, 27, 34, and 35, crossroads; iron stake	36 00 00.5	96 44 58.8	5,309

YALE QUADRANGLE—Continued.

East along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T. 18 N., R. 5 E., corner of secs. 25, 26, 35, and 36, at Pinerose school house, center of crossroads	36 00 00.6	96 43 54.8	.....
T. 18 N., Rs. 5 and 6 E., corner of secs. 25, 30, 31, and 36, center of crossroads	36 00 00.8	96 42 50.4	5,288
Center of Santa Fe Ry. crossing	36 00 01.3	96 42 12.0	3,160
T. 18 N., R. 6 E., corner of secs. 29, 30, 31, and 32, center of north-south road at T road west	36 00 01.5	96 41 46.9	2,060
Santa Fe Ry. crossing	36 00 21.6	96 41 46.8	2,030
T. 18 N., R. 6 E., quarter corner between secs 29 and 30, at T road east, center of north and south road	36 00 27.5	96 41 47.4	598
Santa Fe Ry. crossing	36 00 27.5	36 41 39.1	685
T. 18 N., R. 6 E., quarter corner between secs. 28 and 29, at Schlege station on Santa Fe Ry., center of crossroads	36 00 27.3	96 40 42.4	4,655
Private T road north	36 00 27.3	96 40 10.4	2,631
T. 18 N., R. 6 E., quarter corner between secs. 27 and 28, at T road north, center of east-west road	36 00 27.3	96 39 38.3	2,641
Center of wagon bridge over creek	36 00 27.2	96 39 18.6	1,612
T. 18 N., R. 6 E., quarter corner between secs. 26 and 27, at T road west; stone	36 00 27.5	96 38 33.0	3,749
T. 18 N., R. 6 E., corner of secs. 26, 27, 34, and 35, at T road east; stone with cross on top	36 00 01.3	96 38 34.1	2,638
T. 18 N., R. 7 E., 32 feet south by 37 feet west of bearing tree for quarter corner between secs. 30 and 31, 1 mile north of Drumright, at center of crossroads, 59 feet south of small bearing tree in northwest corner of road forks, 6 feet south of corner fence post; iron post stamped "Prim. Trav. Sta. No. 35, 1916"	36 00 10.5	96 36 38.8	9,514
T. 18 N., R. 7 E., corner of secs. 29, 30, 31, and 32, 1 mile north of Drumright, at angle in east-west road at telephone lines running north and south, 15 feet southwest of white-oak bearing tree; iron bolt driven in ground	36 00 10.8	96 36 06.1	2,688
Wheeler, center of crossroads at, 500 feet west of railroad crossing	36 00 10.8	96 35 49.4	1,372
Wheeler, center of east-west road crossing of the Atchison, Topeka & Santa Fe Ry.	36 00 10.8	96 35 43.4	496
T. 18 N., R. 7 E., corner of secs. 28, 29, 32, and 33, crossroads; iron pipe	36 00 10.9	96 35 01.7	3,429
T. 18 N., R. 7 E., corner of secs. 27, 28, 33, and 34, center of crossroads	36 00 11.3	96 33 57.2	5,300
T. 18 N., R. 7 E., corner of secs. 26, 27, 34, and 35, 170 feet west of small branch, 27 feet east of fence corner; stone	36 00 11.0	96 32 52.8	5,286
T. 18 N., Rs. 7 and 8 E., corner of secs. 25, 30, 31, and 36, at north and south fence line, 260 feet north of gate on angling road; stone	36 00 10.8	96 30 44.5	10,542

YALE QUADRANGLE—Continued.

West along highways through center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks, roads east, west, and southwest	36 09 03.6	96 31 13.5	.....
Crossroads near top of ridge, roads north, south, northwest, and southwest, in sec. 12, T. 19 N., R. 7 E., 15 feet west of dead hickory tree blazed and marked "U. S. G. S"	36 08 31.1	96 31 29.2	3,525
T. 19 N., R. 7 E., corner of secs. 11, 12, 13, and 14, at angle in road west and south, on south bank of Lagoon Creek, 20 feet north of road; stone	36 08 01.0	96 31 48.9	3,435
T. 19 N., R. 7 E., corner of secs. 13, 14, 23, and 24, center of T road west	36 07 09.1	96 31 48.7	5,246
T. 19 N., R. 7 E., quarter corner between secs. 14 and 23, on south side of road, 30 feet northeast of fence corner; quarter stone	36 07 09.2	96 32 21.2	2,659
T. 19 N., R. 7 E., corner of secs. 15, 16, 21, and 22, at road forks, center of triangle	36 07 09.6	96 33 57.8	7,928
T. 19 N., R. 7 E., near quarter corner between secs. 16 and 21, center of crossroads, north and south road is Oilton-Jennings, signpost reading "Jennings 3½ miles"	36 07 09.2	96 34 29.2	2,572
T. 19 N., R. 7 E., corner of secs. 16, 17, 20, and 21, center of crossroads	36 07 09.1	96 35 02.8	2,751
T. 19 N., R. 7. E., approximate corner of secs. 17, 18, 19, and 20, 50 feet east of T road north, center of gate in north-south fence line	36 07 09.2	96 36 06.8	5,248
T. 19 N., Rs. 6 and 7 E., approximate corner of secs. 13, 18, 19, and 24, at fence corners, in line with fence south, center of east-west road	36 07 09.2	96 36 54.8	3,940
T. 19 N., R. 6 E., corner of secs. 13, 14, 23, and 24, corner of crossroads	36 06 59.1	96 37 28.3	2,928
T. 19 N., R. 6 E., 32 feet south by 26 feet east of stone at corner of secs. 14, 15, 22, and 23, 3 miles east of Yale, in southwest corner of crossroads, 3 feet northeast of corner fence post; iron post stamped "Prim. Trav. Sta. No. 38, 1916"	36 06 58.7	96 38 31.9	5,220
T. 19 N., R. 6 E., corner of secs. 15, 16, 21, and 22, center of crossroads	36 06 59.1	96 39 36.9	5,329
T. 19 N., R. 6 E., corner of secs. 16, 17, 20, and 21, crossroads; iron stake	36 06 58.1	96 40 41.4	5,291
T. 19 N., R. 6 E., apparent quarter corner, between secs. 17 and 20, T road north; stone	36 06 58.2	96 41 14.5	2,713
Yale, ball on top of water tower	36 06 50.3	96 41 34.6	1,829
T. 19 N., R. 6 E., corner of secs. 17, 18, 19, and 20, a quarter of a mile west of brick school building in Yale, center of cross streets	36 06 57.8	96 41 46.9	1,266
T. 19 N., R. 6 E., quarter corner of secs. 18 and 19, on northwest side of Yale, at second-class road crossing; stone	36 06 57.8	96 42 18.5	2,588

Magnetic declination along west border of quadrangle, 9° 01′ E.; along south border of quadrangle, 9° 08′ E.; through center of quadrangle, east-west, 9° 08′ E.

KENTUCKY.

PRIMARY TRAVERSE AND PRIMARY LEVELING.

Ekron, Kosmosdale, and Vine Grove quadrangles.

CAMP KNOX MILITARY RESERVATION.

BULLITT, HARDEN, AND MEADE COUNTIES.

Primary traverse was done by Capt. E. C. Bebb, H. S. Senseney, O. B. Walsh, and C. F. Urquhart in 1918.

Positions were derived from Louisville South Base triangulation station of the U. S. Coast and Geodetic Survey, North American Datum.

Connections were made also with stations Nos. 937 and 949 of the Corps of Engineers, U. S. Army.

Primary leveling was done by E. E. Harris and R. B. Steele in 1918.

Elevations are based on heights of bench marks near West Point, 1912 adjustment. For other positions in Kentucky see U. S. Geological Survey Bulletins 122, 181, 216, 245, 276, 310, 440, 496, and 644, United States Coast and Geodetic Survey Special Publication No. 30, and Mississippi River Commission Reports for 1881, 1884, and 1888.

EKRON QUADRANGLE.

From post No. 131 to post No. 122.

Primary traverse by Capt. E. C. Bebb in 1918; primary leveling by Capt. E. C. Bebb in 1918 and R. B. Steele in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Bartles, about 1.75 miles southeast of, south side of road, at T road northwest, in front of schoolhouse; iron post stamped "Prim. Trav. Sta. No. 131, 1918. Elev. 462." Elevation 462.350 feet (140.925 meters)	37 58 09.05	86 00 46.81	.....
Small bridge, in third plank from south end of; nail	37 58 19.33	86 00 57.05	1,324
Bartles, about 0.5 mile southeast of, at north edge of road, on east side of T road south; iron post stamped "Prim. Trav. Sta. No. 205, 1918. Elev. 419." Elevation 418.735 feet (127.631 meters)	37 58 23.67	86 00 57.18	438
Bartles, 0.6 mile northeast of, 0.2 mile west of crossroads, south of road, 50 feet west of east edge of timber, in root of 14-inch hickory tree; copper nail and washer, marked "465.5." Elevation 465.51 feet (141.887 meters).			
At turn in road, 30 feet north of 14-inch sycamore tree; hub	37 58 41.29	86 00 38.97	2,302
Bartles School, about 0.9 mile northeast of, at southeast angle of crossroads; iron post stamped "Prim. Trav. Sta. No. 206, 1918. Elev. 474." Elevation 474.043 feet (144.488 meters)	37 58 42.45	86 00 30.72	670
South side of road, 12 feet northeast of linden tree, in root, blazed "U. S."	37 58 44.19	86 00 12.72	1,450
Bartles School, 1.3 miles northeast of, near old sawmill, on south side of road, in root of 18-inch birch tree; copper nail and washer, marked "U.S.T.B.M. 496.8." Elevation 496.84 feet (151.437 meters).			
North side of road, 25 feet east of large elm tree; hub	37 58 43.97	86 00 00.14	1,008
Bartles School, 1.9 miles northeast of, on top of Iron Mountain, in northeast angle at crossroads, in yard of Mr. Harris's residence; iron post stamped "Prim. Trav. Sta. No. 137, 1918. Elev. 654." Elevation 654.545 feet (199.506 meters)	37 58 36.20	85 59 38.87	1,876
Tioga, about 1 mile northwest of, at road forks, at road northeast, at foot of high bluff, southwest edge of road, 28 feet southwest of southwest end of bridge; iron post stamped "Prim. Trav. Sta. 122, 1918. Elev. 409." Elevation 409.486 feet (124.811 meters)	37 58 25.66	85 59 23.12	1,651

Magnetic declination, 1° 17′ E.

From Muldraugh southwest along highways to Garnettsville.

Primary traverse by H. S. Senseney in 1918; primary leveling by R. B. Steele in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Muldraugh, 0.7 mile southwest of, at southwest corner of T road southeast; iron post stamped "Prim. Trav. Sta. No. 157, 1918. Elev. 145." Elevation 744.896 feet (227.045 meters)	37 56 02.80	86 00 0.60	3,154
South side of road, in line with T road south; hub	37 55 58.48	86 00 23.82	1,220
Muldraugh, 0.9 mile southwest of, on south edge of road, in line with road south, in top of hub; copper nail and washer; a telephone pole 30 feet northeast is marked "U.S.T.B.M. 693.6." Elevation 693.81 feet (211.474 meters).			
Muldraugh, 1.25 miles southwest of, south side of road, opposite lane north; iron post stamped "Prim. Trav. Sta. No. 158, 1918. Elev. 682." Elevation 681.85 feet (207.828 meters)	37 55 51.28	86 00 44.80	1,832
Garnettsville, 1.3 miles northeast of, on south side of road, at old road forks, in hub; copper nail and washer; a boulder 12 feet east is marked "U.S.T.B.M. 588.0." Elevation 588.15 feet (179.269 meters)	37 55 45.66	86 01 19.79	2,860
Garnettsville, 0.8 mile north of, in southwest corner of road forks; iron post stamped "Prim. Trav. Sta. No. 160, 1918. Elev. 480." Elevation 480.275 feet (146.388 meters)	37 55 52.51	86 01 43.35	1,011
Garnettsville, 0.4 mile north of, at mouth of big draw, east side of road, 20 feet south of small creek, in hub; copper nail and washer; a 12-inch sycamore tree 15 feet northeast is marked "U.S.T.B.M. 440.0." Elevation 440.14 feet (134.155 meters)	37 55 38.76	86 01 28.31	1,840
Garnettsville, 370 feet north of crossroads, at southeast corner of cemetery, in base of south gate post; copper nail and washer marked "U.S.T.B.M. 512.5." Elevation 512.67 feet (156.262 meters).			
Garnettsville, southwest corner of crossroads, opposite Allen's store; iron post stamped "Prim. Trav. Sta. No. 174, 1918. Elev. 479." Elevation 479.374 feet (146.113 meters)	37 55 15.52	86 01 39.88	2,528

From Garnettsville southeast along highways to Stithton.

Garnettsville, 300 feet northeast of schoolhouse, north edge of triangle, at road forks, 3 feet south of two mail boxes, in hub; copper nail and washer; a mail-box post 4 feet north is marked "U.S.T.B.M. 563.4." Elevation 563.54 feet (171.768 meters)	37 55 12.71	86 01 26.71	1,093
Garnettsville, 0.7 mile southeast of, south side of road, 15 feet east of farm road south; iron post stamped "Prim. Trav. Sta. No. 175, 1918. Elev. 651.4." Elevation 651.588 feet (198.604 meters)	37 55 00.28	86 01 00.31	2,461
Garnettsville, 1.23 miles southeast of, on south side of road, at dim T road south, in root of 36-inch black-oak tree; copper nail and washer; tree marked "U.S.T.B.M. 677.9." Elevation 678.10 feet (206.685 meters).			
Garnettsville, 1.44 miles southeast of, south side of road, at T road north, at top of hill, in hub; wire nail; a post 25 feet northwest is marked "U.S.T.B.M. 661.8." Elevation 661.98 feet (201.772 meters)	37 54 49.46	86 00 14.13	3,859

From post No. 146, near Grayhampton, to Indian Hill.

Grayhampton, about 0.4 mile east of, at crossroads, near Grayhampton Methodist Church; iron post stamped "Prim. Trav. Sta. No. 146, 1918. Elev. 644." Elevation 643.754 feet (196.217 meters)	37 54 06.95	86 01 13.64	.....
Farm road west; hub	37 53 51.40	86 00 45.85	2,727
Grayhampton, 1.2 miles southeast of, 0.7 mile southeast of Grayhampton Church, 10 feet west of road, 5 feet north of pipe line, top of 12-inch hackberry stump; copper nail and washer, stump marked "U. S. T. B. M. 693.3." Elevation 696 feet (212.269 meters.)			
East side of road, 20 feet north of pipe line; hub	37 53 47.07	86 00 39.42	677
South side of pipe line, 17 feet southwest of faucet, in pipe; hub	37 53 51.05	86 00 15.23	1,980
Indian Hill, on top of, 50 feet northeast of water tank, 2 feet north of t. b. m. wire nail in root of oak tree, marked "U. S. T. B. M. 906.5"; hub; elevation of t. b. m. nail 906.54 feet (276.314 meters)	37 53 50.21	86 00 08.92	512
North side of pipe line; hub	37 53 50.10	85 59 59.58	750

Magnetic declination, 1° 26′ E.

From post No. 176 via Grayhampton to Garnettsville.

Primary traverse by O. B. Walsh in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
On west side of road, opposite house; hub	37 54 29.80	86 00 02.79	.....
Grayhampton, 1.5 miles east of, on south side of road, in root of 18-inch oak tree; copper nail and washer, tree is marked "U. S. T. B. M. 689.8." Elevation 689.97 feet (210.303 meters).			
Grayhampton, about 1.25 miles east of, at T road south; iron post stamped "Prim. Trav. Sta. No. 145, 1918. Elev. 682." Elevation 681.765 feet (207.802 meters)	37 54 21.20	86 00 25.88	2,045
Allenton schoolhouse, opposite; hub	37 54 16.49	86 00 43.10	1,460
Grayhampton, 0.7 mile east of, on south side of road, in line with T road northwest, in base of telephone pole; wire nail, pole is marked "U. S. T. B. M. 662.3". Elevation 662.50 feet (201.930 meters. Iron post No. 146 (previously described)	37 54 06.95	86 01 13.64	2,631
East side of road, 8 feet northwest of fence post, marked "U. S. G. S."; hub	37 54 13.99	86 01 12.34	720
West side of road, opposite peach tree near house; hub	37 54 40.98	86 01 35.09	3,283
Garnettsville, 0.6 mile south of, 100 feet north from brow of hill, on east side of road, 25 feet south of telegraph pole, painted "U. S. P. B. M.", in top of flat stone; aluminum tablet stamped "Prim. Trav. Sta. No. 148, 1918. Elev. 638." Elevation 638.572 feet (194.637 meters)	37 54 46.26	86 01 33.84	543
Center of road, 9 feet southwest of maple tree and 20 feet east of 14-inch black-oak tree; cross on rock	37 55 04.05	86 01 41.17	1,894
Garnettsville, 0.4 mile south of, on west side of road, top of 24-inch oak stump; copper nail and washer; corner fence post is marked "U. S. T. B. M. 576.8." Elevation 576.99 feet (175.867 meters).			
Iron post No. 174 (previously described)	37 55 15.52	86 01 39.88	1,165

Magnetic declination, 1° 11′ E.

From post No. 146 to post No. 147 (spur line).

Iron post No. 146 (previously described)	37 54 06.95	86 01 13.64	.....
Grayhampton, in top of north stone and concrete abutment of bridge over Otter Creek, on west side; bronze tablet stamped "Prim. Trav. Sta. No. 147, 1918. Elev. 521." Elevation 520.759 feet (158.727 meters)	37 54 09.14	86 01 37.44	1,921

From Grayhampton south to McCracken Spring (leveled twice).

Grayhampton Mill dam; top of large iron bolt; head gate wall 65 feet north is marked "U. S. T. B. M. 510.3." Elevation 510.44 feet (155.582 meters).			
Grayhampton, 50 feet southwest of schoolhouse, in root of 16-inch box-elder tree; copper nail and washer, tree marked "U. S. T. B. M. 536.3." Elevation 536.50 feet (163.525 meters).			
Grayhampton, 0.5 mile south of, 900 feet down stream from Thompson's mill dam, on south side of McCracken Branch, in south end of foot bridge; copper nail and washer, bridge marked "U. S. T. B. M. 518.4." Elevation 518.54 feet (158.052 meters).			
Grayhampton, 0.75 mile south of, top of center of Thompson's mill dam, top of bolthead, head gate of mill race, marked "U. S. T. B. M. 529.2." Elevation 529.42 feet (161.368 meters).			
Grayhampton, 1.01 miles south of, 310 feet northwest of McCracken Spring, on west bank of McCracken Branch, in root of 16-inch leaning sycamore tree; copper nail and washer, tree marked "U. S. T. B. M. 544.6." Elevation 544.75 feet (166.041 meters).			
Grayhampton, 1.1 miles south of, at McCracken Spring, 9 feet southwest from top of south inside corner of main outlet, 3.5 feet west from south edge of south outlet, in rock ledge; bronze tablet stamped "555 1918"; sycamore tree 20 feet west is marked "U. S. P. B. M. 555.0." Elevation 555.190 feet (169.222 meters).			

From post No. 129 via highways and Louisville, Henderson & St. Louis R. R. to post No. 121.

Primary leveling by E. E. Harris in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Bartles School, 1.2 miles south of, in south corner of grass triangle formed by forks of road west, in hub; copper nail and washer, hub marked "U. S. T. B. M. 768.0." Elevation 768.07 feet (234.108 meters).			
T road west; hub	37 57 36.40	86 00 04.46	1,222
Bartles School, 0.9 mile south of, at lane crossing, in southeast corner of, in root on west side of 8-inch oak tree; copper nail and washer, marked "U. S. T. B. M. 737.7". Elevation 737.76 feet (224.870 meters).			
Muldraugh, 1.75 miles north of, at crossroads; iron post stamped "Prim. Trav. Sta. No. 130, 1918. Elev. 742.0." Elevation 742.086 feet (226.188 meters)	37 57 52.89	86 00 14.80	1,863
Road forks; hub	37 58 01.83	86 00 24.04	1,169
Bartles School, 0.5 mile south of, at forks with road east, on west side of road, 4 feet south of telephone pole, in hub; copper nail and washer, hub marked "U. S. B. M. 724.1." Elevation 724.11 feet (220.710 meters).			
Cross on rock	37 58 12.03	86 00 33.26	1,270
Iron post No. 131 (previously described)	37 58 09.05	86 00 46.81	1,127
Bartles School, 0.4 mile west of, in northwest corner of road crossing, in root of sycamore tree, 1 foot east of t. b. m. a copper nail and washer in same root; nail. Elevation of b. m. 414.28 feet (126.272 meters)	37 58 03.88	86 01 13.03	2,165
Bartles station, 1.1 miles south of, at road crossing, in northwest corner of crossroad plank; copper nail and washer, marked "U. S. T. B. M. 444.1." Elevation 444.28 feet (135.415 meters).			
West rail of Louisville, Henderson & St. Louis R. R., 12 feet south of road crossing	37 57 55.49	86 01 41.07	2,402

Primary traverse by Capt. E. C. Bebb in 1918.

Road crossing, west rail	37 58 19.09	86 01 32.21	2,490
Bartles station, 0.4 mile south of, 140 feet north of milepost 28, at road crossing, in northeast end of crossroad plank; copper nail and washer, marked "U. S. T. B. M. 448.6." Elevation 448.75 feet (136.780 meters).			
Bartles, 0.17 mile south of station, at road crossing, 20 feet west of west rail of Louisville, Henderson & St. Louis R. R., 7 feet southeast of railroad crossing signboard; iron post stamped "Prim. Trav. Sta. No. 133, 1918. Elev. 449." Elevation 449.443 feet (136.990 meters)	37 58 30.39	86 01 29.90	1,157
Bartles, in front of station, top of east rail. Elevation 450.3 feet (137.25 meters).			
Bartles station, t. b. m. on east rail at	37 58 41.13	86 01 27.22	1,108
Bartles, 0.6 mile north of, at southwest corner of road crossing, 10 feet west of west rail; iron post stamped "Prim. Trav. Sta. No. 134, 1918. Elev. 445." Elevation 444.772 feet (135.566 meters)	37 59 13.82	86 01 20.06	3,354
Pilcher, 0.2 mile southwest of, at lane crossing, northeast corner of crossroad plank; copper nail and washer, marked "U. S. T. B. M. 440.0." Elevation 440.20 feet (134.173 meters).			
Pilcher, 15 feet north of road crossing, west of Louisville, Henderson & St. Louis R. R., opposite station; iron post stamped "Prim. Trav. Sta. No. 135, 1918. Elev. 439." Elevation 438.822 feet (133.754 meters)	37 59 32.45	86 00 50.36	3,032
T. b. m. on north rail	37 59 26.84	86 00 08.90	3,366
Pilcher, 1.0 mile east of, at northwest corner of trestle over creek; copper nail and washer, marked "U. S. T. B. M. 438.3." Elevation 438.58 feet (133.680 meters).			
Bridge, west rail, 6 feet from north end of, opposite warning sign	37 59 16.84	85 59 52.45	1,660
Howard station, 1.7 miles west of, 1.4 miles east of Pilcher station, in northwest corner of crossroad; iron post stamped "Prim. Trav. Sta. No. 121, 1918. Elev. 437." Elevation 436.578 feet (133.069 meters)	37 59 11.79	85 59 33.49	1,601

Magnetic declination, 1° 11′ E.

From post No. 144 southeast to post No. 157.

Primary traverse by O. B. Walsh in 1918; primary leveling by R. B. Steele in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Garnettsville, about 2.7 miles north of, on northeast corner of T road east; iron post stamped "Prim. Trav. Sta. No. 144, 1918. Elev. 462." Elevation 461.880 feet (140.781 meters)	37 57 11.49	86 01 37.67	.....
Muldraugh, 2.5 miles northwest of, on north side of road fork, in root of 8-inch birch tree; copper nail and washer, tree marked "U. S. T. B. M. 632.5." Elevation, 632.65 feet (192.832 meters).			
East side of road, 4 feet west of telegraph pole at south end of tobacco patch; hub	37 56 52.62	86 01 15.98	2,58
Muldraugh, 2.0 miles northwest of, on north side of road, 60 feet west of T road north, 33 feet west of gate; hub, copper nail and washer, gate is marked "U. S. T. B. M. 686.9." Elevation 687.13 feet (209.438 meters)	37 56 47.19	86 01 14.59	561
Muldraugh, 1.5 miles northwest of, 42 feet east of center of main road, 8 feet north of center of T road east to W. H. Adams's farm; iron post stamped "Prim. Trav. Sta. No. 200, 1918. Elev. 705." Elevation 705.355 feet, (214.992 meters)	37 56 24.99	86 01 00.76	2,505
South side of road, opposite white farmhouse; hub	37 56 10.75	86 00 41.42	2,115
Muldraugh, 1.1 miles west of, 50 feet east of gate, on south side of road, in front of two-story house; top of hub, copper nail and washer, gate marked "U. S. T. B. M. 685.7." Elevation 685.90 feet (209.062 meters).			
Post No. 157 (previously described)	37 56 02.80	86 00 09.60	2,674

From post No. 160 to post No. 144 to post No. 132.

Primary leveling by R. B. Steele in 1918.

Post No. 160 (previously described)	37 55 52.51	86 01 43.35	.....
Center of farm road north	37 55 56.02	86 01 47.86	506

Primary traverse by Capt. E. C. Bebb in 1918.

Garnettsville, 1.2 miles north of, on west side of road, at T road west, t. b. m. in root of 14-inch elm tree; copper nail and washer, tree marked "U. S. T. B. M. 438.0." Elevation 438.18 feet (133.558 meters)	37 56 06.53	86 01 54.21	1,178
Center of farm road east	37 56 18.72	86 01 51.67	1,250
Garnettsville, 1.7 miles north of, 10 feet east of edge of road, 30 feet south of Otter Creek, near ford; iron post stamped "Prim. Trav. Sta. No. 143, 1918. Elev. 416." Elevation 416.290 feet (126.885 meters)	37 56 27.77	86 01 44.94	1,062
Garnettsville, 2.0 miles north of, 0.3 mile north of Otter Creek, east side of road, in top of 6-foot sycamore stump; copper nail and washer, stump marked "U. S. T. B. M. 408.6." Elevation 408.79 feet (124.600 meters)	37 56 41.07	86 01 48.08	1,369
West side of road, beside log; hub	37 56 47.68	86 01 48.29	669
Garnettsville, 2.2 miles north of, north side of T road east, in hub; copper nail and washer, marked "U. S. T. B. M. 421.0." Elevation 421.21 feet (128.385 meters)	37 56 51.23	86 01 45.92	407
Edge of road, 3 feet west of gatepost, opposite tree with t. b. m.	37 56 55.14	86 01 40.48	590
Garnettsville, 2.5 miles north of, 600 feet north of Otter Creek, 540 feet northwest of Withers sawmill, 45 feet west of road, in root of 8-inch honey-locust tree; copper nail and washer, tree marked "U. S. T. B. M. 414.4." Elevation 414.60 feet (126.370 meters).			
Iron post No. 144 (previously described)	37 57 11.49	86 01 37.67	1,669
T road north, 18 feet northwest of t. b. m. in center of road; hub	37 57 14.44	86 01 39.64	337
East side of road; hub	37 57 16.62	86 01 54.77	1,232
Center of Otter Creek, 12 feet above foot log across creek	37 57 19.36	86 02 03.24	733
East rail of Louisville, Henderson & St. Louis R. R.	37 57 26.84	86 02 02.79	758
Bartles, 1.2 miles south of, 530 feet south of road crossing, 8 feet east of center of track, 10 feet north of north end of trestle over Otter Creek; iron post stamped "Prim. Trav. Sta. No. 132, 1918. Elev. 442." Elevation 442.372 feet (134.835 meters)	37 57 51.11	86 01 43.90	2,882

Magnetic declination, 1° 13′ E.

From post No. 144 to point near post No. 131.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Post No. 144 (previously described)	37 57 11.49	86 01 37.67	.....
T road north; hub	37 57 14.44	86 01 39.64	337
Garnettsville, 3.0 miles north of, on north bank of small creek where road angles west, on south edge of road northwest and north side of road west, in top of square stone near large sycamore tree beside creek; chiseled square, twin sycamore tree 10 feet south is marked "U. S. T. B. M. 401.5." Elevation 401.72 feet (122.444 meters)	37 57 11.97	86 01 30.00	812
Center of road, 2 feet north of a t. b. m. on tree described below	37 57 21.09	86 01 29.04	926
Garnettsville, 3.2 miles north of, 150 feet east of Otter Creek, on south side of road, in root of 48-inch elm tree; wire nail, tree marked "401.3." Elevation 401.46 feet (122.367 meters).			
Garnettsville, 3.3 miles north of, 50 feet west of Potter's Creek, on east side of road, at west end of board gate, top of stone; chiseled square, gate is marked "U. S. T. B. M. 411.8." Elevation 411.97 feet (125.569 meters).			
8 feet northwest of above-described bench mark	37 57 24.15	86 01 22.78	589
T. b. m. (not described)	37 57 30.28	86 01 29.27	809
West side of road, near large elm; hub	37 57 38.28	86 01 23.13	947
Garnettsville, 4.0 miles north of, on west side of road, near a spring and trough, in root of 16-inch sycamore tree; copper nail and washer, tree is marked "U. S. T. B. M. 397.2." Elevation 397.33 feet (121.107 meters)	37 57 49.86	86 01 22.22	1,173
Nail in root of sycamore tree	37 58 03.88	86 01 13.03	1,597

Magnetic declination, 0° 46′ E.

Tie line from post No. 132 to Ohio River Survey triangulation station b. m. No. 949.

Primary traverse by Capt. E. C. Bebb in 1918.

Prim. Trav. Sta. No. 132 (previously described)	37 57 51.11	86 01 43.90	.....
△ b. m. No. 949, Ohio River Survey	37 57 55.38	86 01 41.21	483

No magnetic declination.

KOSMOSDALE QUADRANGLE.

From West Point northeast along Dixie Highway to post No. 164.

Primary leveling by E. E. Harris in 1918; primary traverse by H. S. Senseney in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
West Point, in west wall of Bank of West Point, in center of window sill, 4 feet above ground; bronze tablet stamped "441." Elevation 441.204 feet (134.478 meters).			
West Point, 0.3 mile northeast of, at highway bridge near Salt River, south end of west bridge seat; chiseled square marked "441.8." Elevation 441.78 feet (134.655 meters).			
South side of road, at east end of highway bridge over Salt River; hub	° ′ ″ 38 00 06.40	° ′ ″ 85 56 28.35	*Feet.* .....
West Point, 0.9 mile east of east end of highway bridge over Salt River, on north side of Dixie Highway at T road south; iron post stamped "Prim. Trav. Sta. No. 162, 1918. Elev. 424." Elevation 424.058 feet (129.253 meters)	38 00 21.45	85 56 12.82	1,964
West Point, 1.0 mile northeast of, on east side of Dixie Highway, in center of top of concrete culvert; chiseled square, marked "U. S. 426.6." Elevation 426.63 feet (130.037 meters).			
West Point, 1.6 miles east of Salt River bridge, on south side of Dixie Highway, east side of gate, at lane south; iron post stamped "Prim. Trav. Sta. No. 163, 1918. Elev. 429." Elevation 429.305 feet (130.852 meters)	38 00 46.11	85 55 36.56	3,826
West Point, 1.8 miles northeast of, in northeast corner of cross lane, on top of drain pipe; chiseled square, marked "U. S. T. B. M. 434.9." Elevation 434.90 feet (132.557 meters).			
T lane south, at southwest corner of; hub	38 01 05.52	85 55 16.00	2,560
West Point, 2.1 miles northeast of, in corner of second-class road crossing, top of drain pipe; chiseled square, marked "U. S. T. B. M. 431.8." Elevation 431.84 feet (131.625 meters).			
West Point, 2.6 miles east of Salt River bridge, 50 feet south of point where Dixie Highway crosses Illinois Central R. R., east side of road; iron post stamped "Prim. Trav. Sta. No. 164, 1918. Elev. 439." Elevation 439.448 feet (133.944 meters)	38 01 29.57	85 54 56.03	2,909

Southeast along highways to Cupio.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Stites station, 0.46 mile northwest of, on north side of iron bridge over Pond Creek, in center of horizontal beam; copper nail and washer, marked "U. S. T. B. M. 416.6." Elevation 416.60 feet (126.980 meters).			
Bridge over Pond Creek, south end of, west side of road; hub	38 01 16.31	85 54 38.22	1,959
Stites station, south side of road, 3 feet east of trestle; hub	38 01 00.66	85 54 16.68	2,340
Stites station, 200 feet south of, on south side of road, at overhead crossing of Louisville, Henderson & St. Louis R. R., in hub; copper nail and washer, marked "U. S. T. B. M. 421.1." Elevation 421.07 feet (128.342 meters).			
Stites station, 0.3 mile east of, south side of road, in line with T road south; iron post stamped "Prim. Trav. Sta. No. 165, 1918. Elev. 433." Elevation 433.083 feet (132.004 meters)	38 00 56.71	85 54 00.11	1,385
Stites station, 0.44 mile southeast of, on south edge of road, in line with road north, 5 feet west of letter box, in hub; copper nail and washer, marked "U. S. T. B. M. 568.3." Elevation, 468.26 feet (142.726 meters).			
Road, north edge of, 12 feet west of gate to small white house	38 01 02.02	85 53 39.22	1,756
Stites station, 0.9 mile east of, 0.31 mile northwest of Nichol School, on north side of road, in top of drain pipe; chiseled square, marked "U. S. T. B. M. 434.1." Elevation, 434.05 feet (132.298 meters).			
Stites station, 1 mile east of, north side of road, about 400 or 600 feet west of Knob Creek or Nichols schoolhouse, opposite T lane south; iron post stamped "Prim. Trav. Sta. No. 166, 1918. Elev. 458." Elevation 457.805 feet (139.539 meters)	38 00 52.54	85 53 09.37	2,573
Stites station, 1.3 miles east of, 600 feet east of Nichols schoolhouse, in northeast corner of road north, top of drain pipe; chiseled square marked "U. S. T. B. M. 438.8." Elevation 438.74 feet (133.729 meters).			
Knob Creek Church, in front of, south side of road; hub	38 00 45.80	85 52 48.48	1,806
Stites station, 1.7 miles east of, on east side of road, 50 feet north of Y road fork, at road west, top of drainpipe; chiseled square, marked "U. S. T. B. M. 429.1". Elevation 429.07 feet (130.780 meters).			
Cupio, 0.5 mile northeast of, in center of triangle made by forks of roads; iron post stamped "Prim. Trav. Sta. No. 167, 1918. Elev. 428." Elevation 428.116 feet (130.490 meters)	38 00 32.24	85 52 28.86	2,084
Cupio, 0.24 mile northeast of, at iron bridge, 15 feet north of north end of, west side of road; hub	38 00 23.22	85 52 41.74	1,377
Cupio, at southwest corner of store (formerly post office), in northwest corner of woodwork around scales; copper nail and washer, marked "U. S. T. B. M. 459.3." Elevation 459.29 feet (139.991 meters).			

Magnetic declination, 0° 36′ E.

From post No. 34 at West Point along Louisville & Nashville R. R. to Louisville south base. (U. S. C. & G. S.)

Primary traverse by Capt. E. C. Bebb, in 1918.

△b. m. No. 937, Ohio River Survey	38 00 24.02	85 56 10.57	.....
Position by Ohio River Survey	38 00 23.97	85 56 10.44	.....
Prim. Trav. Sta. No. 164 (previously described)	38 01 29.57	85 54 56.06	8,922
Louisville south base, about 7 miles from Louisville, a short distance east of Salt River turnpike, few meters east of Cecilian branch of the Louisville & Nashville R. R., just north of a farm-road crossing. Station is in a cultivated field belonging to B. H. Kerrick, whose house is on the opposite side of the railroad a short distance north; marked on north side "U. S. C. & G. S. South Base 1879." Granite monument 10 inches square, 12 inches out of ground	38 09 03.58	85 49 58.23	51,727

From post No. 131 to post No. 122.

Primary traverse by Capt. E. C. Bebb in 1918; primary leveling by R. B. Steele in 1918.

Bartles, about 1.75 miles southeast of, south side of road, at T road northwest, in front of schoolhouse; iron post stamped "Prim. Trav. Sta. No. 131, 1918. Elev. 462." Elevation 462.350 feet (140.925 meters)	37 58 09.05	86 00 46.81	.....
Small bridge, in third plank from south end of; nail	37 58 19.33	86 00 57.05	1,324

From post No. 181 northeast and northwest along highways to post No. 167.

Primary traverse by H. S. Senseney in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
North side of road, at bend, 7 feet south of gate; hub	38 00 05.98	85 51 15.62	2,219
Stites station, 3.0 miles southeast of, thence 0.6 mile south of, southwest side of road, at road forks, in ledge; bronze tablet stamped "Prim. Trav. Sta. No. 183, 1918. Elev. 666." Elevation 666.277 feet (203.081 meters)	38 00 05.59	85 51 20.98	431
Stites station, 3.0 miles southeast of, thence 0.3 mile south of, in forks of lane to northeast, in hub: copper nail and washer, marked "U. S. T. B. M. 484.9." Elevation 484.84 feet (147.780 meters).			
East side of road, at bend; hub	38 00 16.95	85 51 13.72	1,288
Stites station, 3.0 miles southeast of, on west side of road, 30 feet southwest of road forks, 30 feet east of Knob Creek; iron post stamped "Prim. Trav. Sta. No. 184, 1918. Elev. 440." Elevation 440.333 feet (134.213 meters)	38 00 28.49	85 51 23.36	1,399
Stites station, 2.8 miles southeast of, at Moore's store, in southwest corner of triangle at northeast corner of crossroads, 6 feet north of t. b. m. hub, copper nail and washer, marked "448.8." Elevation 448.73 feet (136.774 meters)	38 00 29.80	85 51 35.31	966
Stites station, 2.6 miles southeast of, on north side of road, at forks of lane to northeast, in west side of wooden bridge; copper nail and washer, marked "U. S. T. B. M. 488.2." Elevation 488.17 feet (148.795 meters).			
South side of road, 8 feet west of gate; hub	38 00 26.36	85 52 13.63	3,088
Post No. 167 (previously described)	38 00 32.24	85 52 28.86	1,357

Magnetic declination, 0°21′ E.

VINE GROVE QUADRANGLE.

From West Point along Dixie Highway to Stithton.

Primary traverse by Capt. E. C. Bebb in 1918; primary leveling by E. E. Harris in 1918.

West Point, at southwest corner of Odd Fellows Hall, in northwest corner of public school grounds; northwest corner of brick foundation to schoolhouse bears S. 27°10′ E., distant 26.9 feet, southwest corner of stone foundation to Christian Church bears N. 13° 35′ E., distant 13.6 feet; iron post stamped "Prim. Trav. Sta. No. 34, 1918. Elev. 436." Elevation 435.843 feet (132.845 meters)	37 59 54.10	85 56 57.92	.....
West Point, 0.8 mile southwest of, in center of grass triangle formed by forks of T road west, in hub; copper nail and washer, marked "U. S. T. B. M. 434.5." Elevation 434.53 feet (132.444 meters).			
Howard, at east end of platform, 250 feet east of station; iron post stamped "Prim. Trav. Sta. No. 100, 1918. Elev. 440." Elevation 439.642 feet (134.003 meters)	37 59 21.08	85 57 41.24	4,815
Howard, 0.3 mile south of station, on west side of highway, inside of wire fence and on south edge of lane to farmhouse, in hub; copper nail and washer, marked "U. S. T. B. M. 446.5." Elevation 446.51 feet (136.096 meters).			
Howard, 0.7 mile south of, on east side of highway, 25 feet south of drain pipe, on west side of south gate post, in top of 2 by 2 inch hub; copper nail and washer, marked "U. S. T. B. M. 435.0." Elevation 435.09 feet (132.615 meters).			
Lane west	37 58 39.51	85 57 42.61	4,206
Howard station, 1.2 miles south of, in southeast corner of T road east, on north side of dead tree, 1 foot above ground; iron bolt marked "U. S. T. B. M. 451.5." Elevation 451.52 feet (137.623 meters).			
West Point, 2.7 miles south of, 35 feet north of Illinois Central R. R. trestle, east side of road, at T road west; iron post stamped "Prim. Trav. Sta. No. 101, 1918. Elev. 459." Elevation 459.394 feet (140.023 meters)	37 58 06.96	85 57 38.95	3,305
West Point, 3.4 miles south of, on east side of road, about 100 feet east of creek, at sharp bend between two bridges about 300 feet apart; iron post stamped "Prim. Trav. Sta. No. 102, 1918. Elev. 572." Elevation 571.587 feet (174.220 meters)	37 57 33.19	85 57 23.50	3,633
West Point, 3.7 miles south of, on east edge of highway, at northwest corner of foot bridge over creek, in root on west side of 12-inch sycamore tree; copper nail and washer, marked "U. S. T. B. M. 601.4." Elevation 601.44 feet (183.319 meters).			
Center of road, opposite dripping spring	37 57 16.44	85 57 19.84	1,719

From West Point along Dixie Highway to Stithton—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
West Point, 4.1 miles south of, 25 feet east of center of highway, 80 feet north of barn, on north side of second-class road east, in root on east side of 15-inch hickory tree; copper nail and washer, marked "U. S. T. B. M. 648.4." Elevation 648.42 feet (197.639 meters).			
West Point, 4.2 miles south of, on southwest corner of private lane west, on top of sandstone ledge; chiseled cross in square, marked "U. S. T. B. M. 683.6." Elevation 683.65 feet (208.377 meters).	37 56 50.69	85 57 01.90	2,974
West side of road, opposite Hale road; cross on rock	37 56 49.04	85 57 01.24	175
West Point, 4.3 miles south of, east side of road, in line with Blakley road; iron post stamped "Prim. Trav. Sta. No. 103, 1918. Elev. 702." Elevation 702.167 feet (214.021 meters)	37 56 29.33	85 57 01.27	1,994
West Point, 4.5 miles south of, on west edge of road, 30 feet north of gate to pasture, in root on east side of 12-inch sycamore tree; copper nail and washer, marked "U. S. T. B. M. 734.5." Elevation 734.53 feet (223.886 meters).			
Hub at T road east, 18 feet east of center of road	37 56 23.45	85 56 59.77	606
West Point, 4.7 miles south of, 600 feet north of road west to Tip Top, in center of grass triangle formed by forks of T road east to rifle range, in hub; copper nail and washer. Elevation 765.37 feet (233.285 meters).			
West Point, 4.8 miles south of, east side of road, opposite T road west to Tip Top; iron post stamped "Prim. Trav. Sta. No. 104, 1918. Elev. 781." Elevation 780.779 feet (237.981 meters)	37 56 01.85	85 56 57.53	2,192
Stithton, 1.1 miles northeast of, thence 2.1 miles north, east side of road, 17 feet south of T road east; iron post stamped "Prim. Trav. Sta. No. 105, 1918. Elev. 750." Elevation 750.030 feet (228.609 meters)	37 55 47.65	85 56 54.25	1,460
Stithton, 1.1 miles northeast of, thence 1.8 miles north, in northwest corner of T road west, in root on east side of 15-inch oak tree; copper nail and washer, marked "U. S. T. B. M. 764.0." Elevation 764.05 feet (232.883 meters).			
Private road west	37 55 17.29	85 56 40.87	3,253
Stithton, 1.1 miles northeast of, thence 1.6 miles north, on west side of road, 10 feet east of gate, at corner of fence, in hub; copper nail and washer, marked "U. S. T. B. M. 770.2." Elevation 770.29 feet (234.784 meters).			
Stithton, 1.1 miles northeast of, thence 1.2 miles north, at northeast corner of T road east, Craig road; iron post stamped "Prim. Trav. Sta. No. 106, 1918. Elev. 767." Elevation 766.746 feet (233.704 meters)	37 54 27.30	85 56 32.39	5,102
Stithton, 1.1 miles northeast of, thence 0.9 mile north, on west side of road, on south side of gate, in east root of 12-inch oak tree; copper nail, marked "U. S. T. B. M. 752.0." Elevation 752.06 feet (229.228 meters).			
Stithton, 1.1 miles northeast of, thence 0.6 mile north, on east side of Dixie Highway, in center of concrete culvert; chiseled square, marked "U. S. T. B. M. 699.3." Elevation 699.36 feet (213.169 meters).			
Hub at northeast corner of T road east	37 54 16.54	85 56 27.16	1,167
Stithton, 1.1 miles northeast of, on east side of Dixie road, opposite T road southwest to Stithton; iron post stamped "Prim. Trav. Sta. No. 107, 1918. Elev. 708." Elevation 707.887 feet (215.764 meters)	37 54 01.06	85 56 51.63	2,509
Stithton, 0.6 mile northeast of, 40 feet east of pasture, on north side of road, 2,500 feet west of Dixie Highway, in hub; copper nail and washer, marked "U. S. T. B. M. 725.3." Elevation 725.37 feet (221.093 meters)	37 53 52.95	85 57 02.00	1,168
Stithton, 0.4 mile east of, at northeast corner of T road north, 700 feet east of schoolhouse; iron post stamped "Prim. Trav. Sta. No. 108, 1918. Elev. 737." Elevation 737.283 feet (224.724 meters)	37 53 41.13	85 57 25.36	2,221
Stithton, 105 feet northwest of railroad crossing at station, south side of street, in concrete foundation of pump; bronze tablet stamped "Prim. Trav. Sta. No. 109, 1918. Elev. 737." Elevation 736.930 feet (224.616 meters)	37 53 29.31	85 57 40.13	1,682
Stithton, 0.3 mile west of station, at southwest corner of Main Street and Bloomington road, 60 feet west of road intersection; iron post stamped "Prim. Trav. Sta. No. 110, 1918. Elev. 749." Elevation 749.383 feet (228.413 meters)			

Magnetic declination, 1° 23′ E.

From post No. 128 west to post No. 129, thence south to post No. 156.

Primary traverse by O. B. Walsh in 1918; primary leveling by R. B. Steele and E. E. Harris in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Twin Cave station, 0.9 mile east of, on east edge of road, at T road west, 8 feet northwest of marked chestnut tree; iron post stamped "Prim. Trav. Sta. No. 128, 1918. Elev. 775." Elevation 774.896 feet (236.189 meters)	37 57 09.63	85 58 40.64	.....
Hub at road crossing	37 57 10.58	85 58 44.04	289
Twin Cave station, 0.6 mile east of, 60 feet west of T road north, in root of 36-inch chestnut tree; copper nail and washer, tree is marked "U. S. T. B. M. 747.3." Elevation 747.47 feet (227.289 meters).			
Farm road northeast	37 57 16.09	85 59 06.15	1,857
At right angle turn south, 7 feet northeast of center of road	37 57 19.56	85 59 20.00	1,168
Hub at T road north	37 57 15.48	85 59 23.77	508
Hub at T road north, in center of road	37 57 16.00	85 59 28.81	407
Twin Cave, opposite station signboard, 25 feet west of west rail, in east edge of platform, bolthead marked "U. S. T. B. M. 683.5." Elevation 683.64 feet (208.374 meters).			
East rail of Illinois Central R. R., center of road	37 57 16.30	85 59 31.48	216
Center of farm road east	37 57 16.17	85 59 42.49	882
Twin Cave station, 0.4 mile west of, west side of road, at T road east; iron post stamped "Prim. Trav. Sta. No. 129, 1918. Elev. 749." Elevation 748.809 feet (228.238 meters)	37 57 13.70	85 59 51.42	757
Center of farm road northeast	37 56 59.08	85 59 53.67	1,490
Muldraugh, 0.1 mile west thence 0.5 mile north of, at T road west, in southwest corner of grass triangle formed by forks, in hub; copper nail and washer marked "U. S. T. B. M. 743.2." Elevation 743.35 feet (226.574 meters).			
Muldraugh, 800 feet west of railroad crossing, south side of road, in line with T road north; iron post stamped "Prim. Trav. Sta. No. 156, 1918. Elev. 721." Elevation 720.978 feet (219.754 meters)	37 56 22.47	85 59 39.06	3,882

Magnetic declination, 1° 21′ E.

From post No. 170 along highways to Chapel Ridge Schoolhouse.

Primary traverse by H. S. Senseney in 1918; primary leveling by E. E. Harris in 1918.

Cupio, 1.5 miles southwest of, in center of grass triangle, on northeast side of road up Salt River, in line with road northeast to Cupio; iron post stamped "Prim. Trav. Sta. No. 170, 1918. Elev. 422." Elevation 422.121 feet (128.663 meters)	37 59 13.58	85 53 45.14	.....
West side of road, on south side of gate; hub	37 58 41.83	85 53 31.54	3,391
Chapel Ridge School, 1.6 miles north of, in southwest corner of T road west to river, in hub; copper nail and washer marked "U.S.T.B.M. 724.1." Elevation 724.04 feet (220.688 meters).			
Chapel Ridge School, about 1.5 miles northwest of, south side of road, 30 feet east of T road south; iron post stamped "Prim. Trav. Sta. No. 185, 1918. Elev. 708." Elevation 707.997 feet (215.798 meters)	37 58 31.14	85 53 22.21	1,314
On east side of road, at bend; hub	37 58 25.32	85 53 05.68	1,447
Chapel Ridge School, about 0.6 mile north of, 20 feet north of road at bend, 25 feet southwest of old tobacco house; iron post stamped "Prim. Trav. Sta. No. 186, 1918. Elev. 726." Elevation 725.639 feet (221.175 meters)	37 58 08.36	85 52 43.37	2,476
At road forks; hub	37 57 43.42	85 52 38.88	2,549
Chapel Ridge School, 40 feet north of, 70 feet south of road, in root on north side of 18-inch maple tree; copper nail and washer, marked "U. S. T. B. M. 773.5." Elevation 773.38 feet (235.727 meters).			
Chapel Ridge School, at road forks; hub	37 57 39.59	85 52 34.05	547

From Chapel Ridge School along highways to Charles Funk's residence.

At road forks; hub	37 57 39.60	85 52 24.89	733
Chapel Ridge School, 0.2 mile southeast of, northeast side of road, 15 feet north of road forks; iron post stamped "Prim. Trav. Sta. No. 187, 1918. Elev. 737." Elevation 736.674 feet (224.538 meters)	37 57 35.81	85 52 20.43	524
East side of road, front of house; hub	37 57 41.93	85 52 02.40	1,570
Chapel Ridge School, 0.4 mile east of, on southeast side of road, 20 feet east of lane south, in top of sandstone boulder; chiseled square, marked "U. S. T. B. M. 810.2." Elevation 810.13 feet (246.928 meters).			
Chapel Ridge School, 0.9 mile northeast of, 55 feet southwest of gate to Steve McCobbin's residence, southeast side of road; iron post stamped "Prim. Trav. Sta. No. 188, 1918. Elev. 737." Elevation 737.323 feet (224.736 meters)	37 57 56.93	85 51 40.76	2,304

From Chapel Ridge School along highways to Charles Funk's residence—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
Chapel Ridge School, 1.6 miles northeast of, on south side of road, in center of top of wooden culvert; copper nail and washer, marked "U. S. T. B. M. 728.3." Elevation 728.22 feet (221.962 meters).			
Chapel Ridge School, about 1.5 miles northeast of, north side of road opposite T road south; iron post stamped "Prim. Trav. Sta. No. 189, 1918. Elev. 730." Elevation 729.809 feet (222.447 meters).	° ′ ″ 37 58 16.73	° ′ ″ 85 51 04.02	*Feet.* 3,560
Chapel Ridge School, 1.9 miles northeast of, on south edge of road, in bend, on sandstone ledge; chiseled square, marked "U. S. T. B. M. 719.1." Elevation 719.02 feet (219.158 meters).			
Mount Olive School, 0.34 mile west of, thence 1.3 miles southeast, south side of road, in northwest corner of W. Whiteman's front yard opposite road north; iron post stamped "Prim. Trav. Sta. No. 190, 1918. Elev. 788." Elevation 788.375 feet (240.297 meters)	37 58 28.54	85 50 36.54	2,504
Mount Olive School, 0.3 mile west of, thence 1.1 miles southeast, at forks of farm road west, 80 feet south of creek, in hub; chiseled square, marked "U. S. T. B. M. 556.7." Elevation 556.56 feet (169.640 meters).			
On south side of road, at road south through gate; hub	37 58 38.89	85 50 48.89	1,440
Mount Olive School, 0.3 mile west thence 0.4 mile southeast from, on east side of road, in bed of drain from northeast, in sandstone ledge; chiseled square, marked "U. S. T. B. M. 711.6." Elevation 711.48 feet (216.859 meters).			
On east side of road, 2 feet south of small wooden bridge, 45 feet south of road forks; hub	37 59 04.09	85 50 50.04	2,551
On east side of road, 25 feet north of road forks; hub	37 59 10.04	85 50 51.35	612
Mount Olive School, 0.3 mile west of, about 2 miles southeast of Cupio, north side of road, 15 feet west of road forks at Charles Funk's residence; iron post stamped "Prim. Trav. Sta. No. 181, 1918. Elev. 779." Elevation 778.452 feet (237.273 meters)	37 59 12.81	85 51 18.83	2,218

Northwest via Ridge road to post No. 169.

Mount Olive School, 0.7 mile southwest of, in center of grass triangle at road fork to north, in top of stump; copper nail and washer, marked "U. S. T. B. M. 818.0." Elevation 817.94 feet (249.309 meters).			
At northwest corner of T road north; hub	37 59 04.79	85 51 38.74	1,788
Cupio, 1.0 mile southwest thence 1.2 miles southeast from, in center of grass triangle at road fork south, in hub; copper nail and washer, marked "U. S. T. B. M. 808.4." Elevation 808.33 feet (246.380 meters).			
Cupio, 1.0 mile southwest thence 0.8 mile southeast from, south side of road, front of Jacob Murker's residence, 25 feet east of lane; iron post stamped "Prim. Trav. Sta. No. 180, 1918. Elev. 769." Elevation 769.127 feet (234.431 meters)	37 59 18.06	85 52 38.27	2,357
Cupio, 1.0 mile southwest thence 0.3 mile southeast from, in center of grass triangle at farm road south, in hub; copper nail and washer, marked "U. S. T. B. M. 763.8." Elevation 763.72 feet (232.782 meters).			
South side of road, top of hill; hub	37 59 36.57	85 53 02.05	2,671
Cupio, 1 mile southwest of, at southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 169, 1918. Elev. 733." Elevation 732.477 feet (223.259 meters)	37 59 41.06	85 53 17.84	1,343

Magnetic declination, 0° 0′.

From post No. 185 along highways south and northeast to post No. 187.

Prim. Trav. Sta. No. 185 (previously described)	37 58 31.14	85 53 22.21	.....
Chapel Ridge School, 1.5 miles northwest thence 0.3 mile south from, on west side of road, 120 feet north of drainpipe, on sandstone ledge; chiseled square, marked "U. S. T. B. M. 571.1." Elevation 571.09 feet (174.068 meters).			
East side of road at bend; hub	37 58 15.05	85 53 23.60	1,632
West side of road, at farm road west; hub	37 57 58.21	85 53 30.56	1,793
Chapel Ridge School, 1.5 miles northwest thence 0.6 mile south from, in center of grass triangle formed by roads in three directions, in hub; copper nail and washer, marked "U. S. T. B. M. 458.7." Elevation 458.66 feet (139.800 meters).			
Chapel Ridge School, about 1 mile west of, west side of road, in line with T road west; iron post stamped "Prim. Trav. Sta. No. 191, 1918. Elev. 460." Elevation 460.389 feet (140.327 meters)	37 57 37.63	85 53 31.41	2,083
Chapel Ridge School, 1 mile west of, thence 0.2 mile south, in southwest corner of road forks in hub; copper nail and washer, marked "U. S. T. B. M. 478.2." Elevation 478.17 feet (145.747 meters).			
South side of road, front of house, 10 feet east of t. b. m.; hub	37 57 29.03	85 53 21.82	1,161

From post No. 185 along highways south and northeast to post No. 187—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Chapel Ridge School, 1 mile west thence 0.6 mile south from, in northwest corner of road forks, in root on east side of 30-inch beech tree; copper nail and washer, marked "U. S. T. B. M. 435.8." Elevation 435.76 feet (132.820 meters).			
West side of road, at farm road west; hub	37 57 09.98	85 53 21.31	1,928
Chapel Ridge School, about 1.5 miles southwest of, east side of road, 35 feet north of William Hite's residence; iron post stamped "Prim. Trav. Sta. No. 192, 1918. Elev. 452." Elevation 452.019 feet (137.776 meters)	37 56 56.94	85 53 21.07	1,320
South side of road; hub	37 56 44.40	85 53 12.30	1,451
Chapel Ridge School, about 1 mile south of, southeast side of road; iron post stamped "Prim. Trav. Sta. No. 193, 1918. Elev. 423." Elevation 423.414 feet (129.057 meters)	37 56 58.74	85 52 42.91	2,764
Chapel Ridge School, 0.2 mile east thence 0.4 mile south from, at forks of River and Shively roads, in line with road north; in hub, copper nail and washer, marked "U. S. T. B. M. 465.3." Elevation 465.30 feet (141.823 meters)	37 57 14.36	85 52 23.43	2,219
West side of road; hub	37 57 30.59	85 52 22.10	1,644
Prim. Trav. Sta. No. 187 (previously described)	37 57 35.11	85 52 20.42	544

Magnetic declination, 0° 27′ E.

From Cupio along highways to West Point via Katharyn.

Cupio, 0.3 mile southwest of McKinley's store, northwest side of road, 25 feet southwest of gate; iron post stamped "Prim. Trav. Sta. No. 168, 1918. Elev. 446." Elevation 445.888 feet (135.907 meters)	38 00 08.74	85 53 01.21	2,139
Cupio, 0.7 mile southwest of, 500 feet east of farm house, at sharp bend, northwest side of road, in hub; copper nail and washer, marked "U. S. T. B. M. 662.5." Elevation 662.45 feet (201.915 meters)	37 59 52.47	85 53 10.31	1,799
Cupio, 1.0 mile southwest of, on top of Highland Ridge, at southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 169, 1918. Elev. 733." Elevation 732.477 feet (223.259 meters)	37 59 41.06	85 53 17.84	1,304
Cupio, 1.2 miles southwest of, on east edge of road, at start of drain, in top of sandstone ledge; chiseled square marked "U. S. T. B. M. 597.9." Elevation 597.82 feet (182.216 meters).			
Cupio, 1.6 miles southwest of, on east side of road up Salt River, in line with road to Cupio; iron post stamped "Prim. Trav. Sta. No. 170, 1918"	37 59 13.58	85 53 45.14	3,536
Katharyn, 2.1 miles southeast of, on northeast side of road, in elbow of 15-inch drainpipe; chiseled square, marked "U. S. T. B. M. 459.3." Elevation 459.28 feet (139.988 meters).			
Katharyn, 1.5 miles southeast of, 60 feet east of sharp bend in road, near Buzzard's Roost, north side of road; iron post stamped "Prim. Trav. Sta. No. 171, 1918. Elev. 465." Elevation 464.567 feet (141.600 meters)	37 59 32.70	85 54 28.41	3,968
Katharyn, 1.2 miles southeast of, in bend of road, on southwest side of, 8 feet northeast of large oak tree, in hub, copper nail and washer, marked "U. S. T. B. M. 426.5." Elevation 426.51 feet (130.000 meters).			
House in hollow, 50 feet south of gate to, east side of road, 5 feet north of large iron drainpipe; hub	37 59 39.53	85 54 52.96	2,083
Katharyn, 0.6 mile southeast of, southwest side of road up Salt River, 20 feet south of road east to Cupio; iron post stamped "Prim. Trav. Sta. No. 172, 1918. Elev. 452." Elevation 452.149 feet (137.815 meters)	37 59 41.53	85 55 27.58	2,779
Katharyn, 0.5 mile southeast of, on north side of road, in top of 2-foot drain pipe; chiseled square, marked "U. S. T. B. M. 427.0." Elevation 427.01 feet (130.153 meters).			
Lane west, at sharp bend in road; hub	37 59 46.21	85 55 42.47	1,282
Katharyn, 4 feet south of south rail of main line, 4 feet east of east edge of road, at railroad crossing; hub	38 00 02.17	85 55 44.74	1,624
Katharyn, 60 feet north of station, in northeast corner of road crossing, in hub; copper nail and washer, marked "U. S. T. B. M. 441.1." Elevation 441.16 feet (134.466 meters).			
East end of Louisville, Henderson & St. Louis R. R. bridge over Salt River, 6 feet east of, 3 feet south of south rail; hub	37 59 47.94	85 56 03.68	2,091
Katharyn, 0.6 mile southwest of, 0.5 mile southeast of West Point, 0.7 mile east of Louisville, Henderson & St. Louis R. R. station, 10 feet southwest of west end of trestle approach to Louisville, Henderson & St. Louis R. R. bridge over Salt River; iron post stamped "Prim. Trav. Sta. No. 115, 1918. Elev. 445." Elevation 445.070 feet (135.657 meters)	37 59 45.93	85 56 12.92	767

Magnetic declination, 0° 24′ W.

From post No. 103 along highways to Muldraugh.

Primary leveling by R. B. Steele in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Iron post No. 103 (previously described)	37 56 49.04	85 57 01.24	
Muldraugh, 2.2 miles east of, 0.5 mile west of Dixie Highway, on north side of Blakley road, 5 feet east of gate; iron post stamped "Prim. Trav. Sta. No. 150, 1918. Elev. 737." Elevation 737.291 feet (224.727 meters)	37 56 37.12	85 57 32.86	2,806
Muldraugh, 1.8 miles northeast of, 50 feet west of private road south, in north end of wood culvert; copper nail and washer, culvert marked "U. S. T. B. M. 716.4." Elevation 716.51 feet (218.392 meters).			
Muldraugh, 1.5 miles northeast of, on north side of Blakley road, opposite Wilbur Chapman's residence; iron post stamped "Prim. Trav. Sta. No. 151, 1918. Elev. 748." Elevation 748.288 feet (228.079)	37 56 26.39	85 58 15.95	3,619
Muldraugh, 0.7 mile northeast of, 10 feet south of road on line with Blakley road, in hub; copper nail and washer; post 12 feet southwest is marked "U. S. T. B. M. 769.3." Elevation 769.50 feet (234.544 meters)	37 56 41.40	85 58 44.89	2,772
Muldraugh, 0.6 mile east of, north side of road, 6 feet east of gate; iron post stamped "Prim. Trav. Sta. No. 155, 1918. Elev. 750." Elevation 750.266 feet (228.681 meters)	37 56 39.01	85 58 56.59	968
Muldraugh, 0.1 mile northeast of, south side of road, at T road south, in hub; copper nail and washer; a telephone pole 20 feet north is marked "U. S. T. B. M. 752.1." Elevation 752.23 feet (229.28 meters)	37 56 28.64	85 59 22.15	2,301
Muldraugh, center of main line track, 12 feet south of center of railroad crossing; hub	37 56 25.49	85 59 29.98	704
Muldraugh, 750 feet west of station, 800 feet west of railroad crossing, south side of road, in line with T road north; iron post stamped "Prim. Trav. Sta. No. 156, 1918. Elev. 721." Elevation 720.978 feet (219.754 meters)	37 56 22.47	85 59 39.06	789

From Garnettsville along highways to Stithton.

Primary leveling by E. E. Harris in 1918.

Crittenden crossroads, 1.2 miles west of Tip Top, 75 feet east of road forks, 18 feet south of stone road, in center of grass triangle; iron post stamped "Prim. Trav. Sta. No. 176, 1918. Elev. 734." Elevation 734.076 feet (223.747 meters)	37 54 44.16	85 59 39.27	2,837
Crittenden crossroads, 0.3 mile southeast of, in west corner at second class road southwest, in hub; copper nail and washer, marked "U. S. T. B. M. 756.4." Elevation 756.55 feet (230.597 meters).			
Lane south, on north side of road; hub	37 54 33.35	85 59 23.08	1,702
Boones crossroads, 0.3 mile northwest of, on southwest edge of road, 120 feet northwest of farmhouse on northeast side of road, in root on north side of 18-inch oak tree; copper nail and washer, marked "U. S. T. B. M. 733.1." Elevation 733.16 feet (223.468 meters).			
Boones crossroads, 1.3 miles northwest of Stithton, in triangle made by crossroads; iron post stamped "Prim. Trav. Sta. No. 177, 1918. Elev. 699." Elevation 698.710 feet (212.967 meters)	37 54 15.06	85 58 38.47	4,026
Boones crossroads, 0.3 mile southeast of, on northeast side of road, opposite timber line southwest, in center of top of wooden culvert; copper nail and washer, marked "U. S. T. B. M. 726.4." Elevation 726.52 feet (221.443 meters).			
South edge of road, 80 feet east of gate, on south side of road; hub	37 53 54.22	85 58 07.03	3,285
North side of road, at road north through gate; hub	37 53 47.34	85 57 55.42	1,162
Boones crossroads, 0.9 mile southeast of, in south corner at T road southwest, in top of sandstone outcrop; chiseled square. Elevation 721.54 feet (219.926 meters).			
Northeast side of road, in line with T road southwest; hub	37 53 43.95	85 57 52.97	395
Iron post No. 110 (previously described)	37 53 29.31	85 57 40.13	1,803

Magnetic declination, 1° 43′ E.

From post No. 161 west along Webster road to Dixie Highway.

Primary leveling by R. B. Steele in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Stithton, about 3.1 miles northeast of, on southeast side of Webster road, in line with Crain road northwest; iron post stamped "Prim. Trav. Sta. No. 161, 1918. Elev. 452". Elevation 451.770 feet (137.700 meters)	37 54 32.00	85 54 23.70	.....
Stithton, 1.2 miles east thence 1.8 miles northeast from, at road forks, about 80 feet north of Mill Creek, on east edge of Webster road, in base of 20-inch sycamore tree; wire nail, tree marked "U. S. T. B. M. 417.0." Elevation 417.04 feet (127.114 meters). Road, 18 feet north of, 30 feet east of dry creek bed, near barn; hub.	37 54 21.12	85 54 41.43	1,796
Stithton, 1.2 miles east thence 1.5 miles northeast from, at base of Samuel's Hill, on southeast edge of Webster road, near bottom of big draw, on top of large stone; chiseled square, a tree is marked "U. S. T. B. M. 427.1." Elevation 427.14 feet (130.193 meters). Stithton, 1.2 miles east thence 1.2 miles northeast from, on northwest side of Webster road, near summit of Samuel's Hill, in root of old oak stump; copper nail and washer; a fence post 4 feet east is marked "U. S. B. M. 665.0." Elevation 665.92 feet (202.972 meters). Artillery Range Signal No. 20; iron post stamped "Art. Tri. Sta. No. 20, 1918. Elev. 701." Elevation 701.027 feet (213.673 meters)	37 54 20.26	85 55 11.85	2,440
Stithton, 1.2 miles east thence 0.8 mile northeast, of, on northwest side of Webster road; 600 feet northeast of summit of high ridge, about 1 mile northeast of Dixie Highway; iron post stamped "Prim. Trav. Sta. No. 178, 1918. Elev. 684." Elevation 684.268 feet (208.566 meters)	37 54 22.46	85 55 18.13	549
Stithton, 1.2 miles east thence 0.7 mile northeast of, northwest side of Webster road, in line with T road southeast, in hub; copper nail and washer; a telephone pole 15 feet west is marked "U. S. T. B. M. 695.1." Elevation 695.19 feet (211.894 meters).	37 54 16.12	85 55 30.30	1,166
Stithton, 1.2 miles east thence 0.5 mile northeast from, on northwest edge of Webster road, in line with T road southeast, top of stake; copper nail and washer; a gate 15 feet west is marked "U. S. T. B. M. 677.9." Elevation 677.96 feet (206.643 meters). Northwest side of road, 30 feet east of gate, opposite mail box 91; hub	37 54 10.24	85 55 39.08	920
Stithton, 1.25 miles east of, east side of Dixie Highway, in line with Webster road to northeast; iron post stamped "Prim. Trav. Sta. No. 179, 1918. Elev. 663." Elevation 663.531 feet (202.245 meters)	37 53 55.07	85 56 02.82	2,444
Stithton, 1.1 miles northeast thence 0.5 mile southeast from, 0.2 mile southeast of milepost 16, southwest side of Dixie Highway at lane northeast, in hub; copper nail and washer; a telephone pole 8 feet west is marked "U. S. T. B. M. 683.6." Elevation 683.70 feet (208.392 meters)	37 54 00.41	85 56 07.71	666
Stithton, 1.1 miles northeast thence 1,000 feet southeast from, on northeast edge of Dixie Highway, top of stone milepost 16; chiseled square; a tree 10 feet east is marked "U. S. T. B. M. 703.4." Elevation 703.43 feet (214.406 meters). Iron post No. 107 (previously described)	37 54 16.54	85 56 27.16	2,256

Magnetic declination, 0° 33′ E.

From Indian Hill to Stithton.

Primary leveling by R. B. Steele in 1918.

Indian Hill, 0.6 mile east of summit, near base, 40 feet southeast of pipe line, at edge of clearing, in center of old road; iron post stamped "Prim. Trav. Sta. No. 203, 1918. Elev. 748." Elevation 748.644 feet (228.187 meters)	37 53 52.20	85 59 49.61	826
Stump, 1 foot north of elevation on; hub	37 53 48.16	85 59 35.14	1,230
Stithton, 1.7 miles west of, on north edge of road, at top of ridge; hub; a tree 5 feet north of hub painted "U. S. T. B. M. 723.9." Elevation 724.07 feet (220.697 meters)	37 53 41.18	85 59 25.04	1,073
Stithton, 1.3 miles west of, 100 feet north of sawmill, at north edge of road, at T road north; iron post stamped "Prim. Trav. Sta. No. 204, 1918. Elev. 629." Elevation 629.357 feet (191.829 meters)	37 53 24.63	85 59 08.73	2,125
Stithton, 1.0 mile west of, on south side of road, at road fork south: iron spike in root of 15-inch oak tree; tree is marked "U. S. T. B. M. 659.6." Elevation 659.74 feet (201.090 meters)	37 53 31.53	85 58 46.69	1,899

From Indian Hill to Stithton—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Stithton, 0.8 mile west of, on east side of small creek, on south side of road, on top of cement pillar chiseled square; pillar is marked "U. S. T. B. M. 667.3." Elevation 667.43 feet (203.433 meters)	37 53 34.05	85 58 19.75	2,174
In pasture, 120 feet southeast of farm gate; hub	37 53 31.05	85 58 07.83	1,003
Stithton, 0.5 mile west of, on south side of T road fork southwest, in top of stone; chiseled square, marked "U. S. T. B. M. 721.5." Elevation 721.54 feet (219.926 meters).			
Stithton, iron post No. 110 (previously described)	37 53 29.31	85 57 40.13	2,227

Magnetic declination, 1° 29′ E.

From post No. 204 along highway to post No. 177.

Iron post No. 204 (previously described)	37 53 24.63	85 59 08.73	.....
Center of road, 18 feet north of; hub	37 53 37.49	85 59 07.17	1,307
North wheel track, 15 feet north of center of road north	37 53 44.38	85 59 05.83	705
Stithton, 1.2 miles northwest thence 0.5 mile southwest of, cross-roads, on west side of Litchfield road, 50 feet southwest of road forks, in root of 36-inch white-oak tree; copper nail and washer; tree marked "U. S. T. B. M. 665.6." Elevation 665.75 feet (202.921 meters).			
T road north: hub	37 53 54.09	85 58 58.99	1,125
Center of creek, 30 feet north of, 10 feet east of center of road, near stump	37 53 56.21	85 58 49.68	777
Iron post No. 177 (previously described)	37 54 15.06	85 58 38.47	2,107

Magnetic declination, 1° 42′ E.

From T road south near post No. 123 to post No. 125.

Primary traverse by O. B. Walsh in 1918.

At T road south; hub	37 58 04.03	85 58 11.25	.....
Tioga station, 0.5 mile west of, 600 feet north of Illinois Central R. R. viaduct, 0.4 mile west of Dixie Highway, north side of road fork, 4 feet south of a gate, in stump; copper nail and washer, marked "U. S. T. B. M. 439.0." Elevation 439.07 feet (133.828 meters).			
Center line of overhead trestle	37 57 58.45	85 58 16.11	685
Tioga station, 0.5 mile west thence 0.2 mile south from, 40 feet northeast of road forks, on east side of road, in root of 36-inch birch tree; copper nail and washer; tree marked "U. S. T. B. M. 483.8." Elevation 484.08 feet (147.548 meters).			
Road fork, hub, at foot of large beech tree	37 57 49.08	85 58 24.35	1,154
Road forks	37 57 41.48	85 58 37.33	1,292
Twin Cave station, 0.9 mile east thence 0.6 mile north from, on east side of road, at T road southeast, in root of 14-inch hickory tree; copper nail and washer; tree is marked "U. S. T. B. M." Elevation 721.30 feet (219.852 meters).			
At T road east, 4 feet west of triangle made by roads; hub	37 57 36.45	85 58 34.77	547
Twin Cave station, 0.9 mile east thence 0.4 mile north of, 50 feet south of T road east, on east side of road, in root of 30-inch oak tree; copper nail and washer, marked "U. S. T. B. M. 735.6." Elevation 735.79 feet (224.269 meters).			
T road east; hub	37 57 27.95	85 58 33.23	868
Twin Cave station, 0.9 mile east of, on east side of road, at T road west, 8 feet northwest of chestnut tree; iron post stamped "Prim. Trav. Sta. No. 128, 1918. Elev. 775." Elevation 774.896 feet (236.189 meters)	37 57 09.63	85 58 40.64	1,945
Twin Cave station, 0.9 mile east thence 0.2 mile south from, at right angle in road, in base of large oak stump; copper nail and washer; a plank fence 10 feet south is marked "U. S. T. B. M. 761.0." Elevation 761.16 feet (232.002 meters).			
Muldraugh, about 1.0 mile northeast of, 400 feet northeast of T road north, on north side of road, on hill top opposite farm road south; iron post stamped "Prim. Trav. Sta. No. 125, 1918. Elev. 776". Elevation 776.111 feet (236.559 meters)	37 56 47.86	85 58 27.71	2,434

Magnetic declination, 1° 21′ E.

From post No. 106 along Crain road to Webster road.

Primary leveling by R. B. Steele, in 1918; primary traverse by H. S. Senseney in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Iron post No. 106 (previously described)	37 55 17.29	85 56 40.87	
North side of road, in line with road south, at lane east; hub	37 55 18.94	85 56 31.58	764
Artillery Range Signal No. 13; iron post stamped "Art. Tri. Sta. No. 13, 1918. Elev. 768." Elevation 768.043 feet (234.100 meters).	37 55 10.21	85 56 27.70	936
Stithton, 2.3 miles northeast of, along Devore road, thence 0.9 mile northwest along Crain road, 0.4 mile southeast of Dixie Highway, in hub; copper nail and washer; a 6-inch persimmon tree 15 feet west is marked "U. S. T. B. M. 760.7." Elevation 760.79 feet (231.889 meters).			
East side of road, in line with T road northeast at old schoolhouse; hub	37 55 04.80	85 55 48.55	3,185
Stithton, 2.3 miles northeast of, along Devore road, thence 0.4 mile northwest along Crain road, on east edge of road, in line with T road east, in hub; wire nail; corner fence post 15 feet east is marked "U. S. T. B. M. 731.0." Elevation 731.07 feet (222.830 meters).			
Stithton, about 2.3 miles northeast of, on northeast side of Crain road, in line with the Devore road southwest; iron post stamped "Prim. Trav. Sta. No. 159, 1918 Elev. 726". Elevation 726.373 feet (221.399 meters)	37 54 56.59	85 55 29.61	1,730
Stithton, 2.3 miles northeast of, along Devore road, thence 0.3 mile southeast along Crain road, on northeast side of road, at T road north, in hub; wire nail; a 6-inch oak tree 6 feet northeast is marked "U. S. T. B. M. 745.7". Elevation 745.81 feet (227.323 meters).			
East side of road, top of hill, front of log cabin; hub	37 54 52.85	85 55 05.04	2,006
Stithton, 2.3 miles northeast of, along Devore road, thence 0.6 mile southeast along Crain road, at top of Samuel's Hill, on southwest edge of road, in hub; copper nail and washer; a 10-inch oak tree 14 feet west is marked "U. S. T. B. M. 701.8". Elevation 701.89 feet (213.936 meters).			
Southwest side of road, top of hill, at old road south; hub	37 54 41.22	85 54 48.74	1,759
Stithton, 2.3 miles northeast of, along Devore road, thence 0.8 mile southeast, along Crain road, in line with T road north, center of road, top of large stone; chiseled square; a 14-inch maple tree 50 feet northwest is marked "U. S. T. B. M. 612.5". Elevation 612.61 feet (186.724 meters).			
Iron post No. 161 (previously described)	37 54 32.00	85 54 23.70	2,213

Northeast along Webster road to Mill Creek, thence northwest to post No. 133.

Primary leveling by E. E. Harris in 1918.

Stithton, 3.3 miles northeast of, on southwest side of Webster road, on southwest side of wooden bridge over drain; copper nail and washer, marked "U. S. T. B. M. 441.2". Elevation 440.98 feet (134.411 meters).			
Stithton, 3.6 miles northeast of, on southeast side of Webster road, in center of southeast side of bridge over Bundel Creek; copper nail and washer, marked "U. S. T. B. M. 420.5". Elevation 420.28 feet (128.101 meters).			
Mill Creek, northwest side of road, 40 feet north of bridge; hub	37 54 55.05	85 54 06.11	2,724
Stithton, 4.0 miles northeast of, on Webster road, at west corner of road forks; iron post stamped "Prim. Trav. Sta. No. 199, 1918. Elev. 420". Elevation 419.677 feet (127.917 meters)	37 55 07.06	85 53 47.09	1,949
Hub with flag	37 55 09.76	85 54 03.55	1,346
Stithton, 4.0 miles northeast of, on Webster road, thence 0.7 mile northwest, on southwest side of road, near bend of Bundell Creek, in root on north side of 15-inch hickory tree; copper nail and washer, marked "U. S. T. B. M. 413.5." Elevation 413.22 feet (125.950 meters).			
Hub with flag	37 55 20.40	85 54 35.23	2,757
Hub with flag near southwest corner of orchard	37 55 27.90	85 54 50.04	1,408
Stithton, 4.0 miles northeast of, on Webster road, thence 1.1 miles northwest along Mill Creek road, northwest side of drain, 30 feet northeast of road, in root on north side of 30-inch elm tree; copper nail and washer, marked "U. S. T. B. M. 449.4." Elevation 449.17 feet (136.907 meters).			
Stithton, 4.0 miles northeast of, along Webster road, thence 1.2 miles northwest on road up Mill Creek, at southwest corner of road forks west, 15 feet southwest of corner fence post; iron post stamped "Prim. Trav. Sta. No. 202, 1918. Elev. 447." Elevation 447.224 feet (136.314 meters)	37 55 39.76	85 54 46.67	1,231
Stithton, 3.2 miles northeast of, on Dixie highway, thence 1.8 miles east on Wilder road, 200 feet west of road forks, 30 feet east of creek, 400 feet west of house; iron post stamped "Prim. Trav. Sta. No. 153, 1918. Elev. 418." Elevation 422.432 feet (128.758 meters.)	37 55 51.53	85 55 12.78	2,408

From post No. 142 along highways to post No. 157.

Primary leveling by R. B. Steele in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tip Top, 0.5 mile southwest of, at southeast side of road, at T road north, 600 feet west of Tip Top schoolhouse; iron post stamped "Prim. Trav. Sta. No. 142, 1918. Elev. 762." Elevation 762.513 feet (232.414 meters)	37 55 00.42	85 59 01.84	.....
Tip Top School, 0.2 mile northwest of, in center of Dickson road, in hub (t. b. m.); copper nail and washer; a fence post 10 feet east is marked "U. S. 766.3." Elevation 766.44 feet (233.610 meters)	37 55 06.32	85 59 07.88	768
Tip Top School, 0.5 mile northwest of, 90 feet west of an old log cabin on top of high ridge, in center of Dickson road, in root of 16-inch white-oak tree; copper nail and washer, marked "U. S. T. B. M. 767.2." Elevation 767.39 feet (233.901 meters.)			
West side of the road, opposite small house; hub	37 55 19.58	85 59 22.50	1,780
Tip Top School, 0.7 mile northwest of, at top of short ridge, on east edge of Dickson road, at dim crossroads, in stake; copper nail and washer; a 10-inch oak tree 15 feet west is marked "U. S. T. B. M. 735.4." Elevation 735.56 feet (224.199 meters).			
Tip Top School, 0.7 mile northwest of, on Dickson road, at T road east; iron post stamped "Prim. Trav. Sta. No. 149, 1918" (no elevation determined)	37 55 29.92	85 59 33.41	1,363
Muldraugh, 0.7 mile southwest of, thence 0.6 mile southeast, on west edge of Dickson road, near top of ridge, at T road west, in hub; copper nail and washer; a gate 10 feet west is marked "U. S. T. B. M. 725.6." Elevation 725.78 feet (221.218 meters).			
T. B. M. on bridge	37 55 40.24	85 59 44.55	1,373
Muldraugh, 0.7 mile southwest of, thence 0.3 mile southeast, in center of Dickson road, in line with T road entrance to Proctor farm, on hub; copper nail and washer; a brick gate post 15 feet west is marked "U. S. T. B. M. 719.3." Elevation 719.41 feet (219.277 meters).			
Iron post No. 157 (previously described)	37 56 02.80	85 00 09.60	3,039

Magnetic declination, 1° 28′ E.

Muldraugh, 0.3 mile southwest of, on northwest side of road, in bottom of drain, in top of hub; copper nail and washer; a 4-inch locust tree, 2 feet west, is marked "U. S. T. B. M. 716.6." Elevation 716.77 feet (218.472 meters)			

From post No. 199 along Webster road to Salt River.

Primary leveling by E. E. Harris in 1918.

Iron post No. 199 (previously described)	37 55 07.06	85 53 47.09	.....
Stithton, 4.2 miles northeast of, on northwest side of Webster road, 40 feet west of forks of road, 70 feet northwest of store, in hub; copper nail and washer, marked "U. S. T. B. M. 437.5." Elevation 437.22 feet (133.265 meters).			
Store, 18 feet north of, east side of road, 4 feet west of fence; hub	37 55 11.58	85 53 34.49	1,107
West side of road, at road forks, near top of hill; hub	37 55 22.49	85 53 30.18	1,158
Stithton, 4.5 miles northeast of, on northwest side of Webster road, on south side of lane, 30 feet from gate, in hub; copper nail and washer, marked "U. S. T. B. M. 502.1." Elevation 501.89 feet (152.976 meters).			
Stithton, 5.0 miles northeast of, on Webster road, at east corner of road forks southeast; iron post stamped "Prim. Trav. Sta. No. 198, 1918. Elev. 443." Elevation 442.778 feet (134.959 meters)	37 55 47.81	85 53 06.52	3,185
West side of road, 80 feet south of road forks; hub	37 55 52.38	85 53 06.67	460
Stithton, 5.3 miles northeast of, on northwest side of Webster road, 30 feet northeast of gate to farmhouse, on top of sandstone ledge; chiseled square, marked "U. S. T. B. M. 435.4." Elevation 435.13 feet (132.628 meters).			
North side of road, 3 feet west of small creek; hub	37 56 08.68	85 52 54.86	1,901
Stithton, 5.1 miles northeast of, on northwest side of Webster road, 120 feet northeast of farmhouse, in hub; copper nail and washer, marked "U. S. T. B. M. 450.0." Elevation 449.70 feet (137.068 meters).			
West side of road, 4 feet north of small drain; hub	37 56 15.95	85 52 42.58	1,227
Stithton, 6.0 miles northeast of, on northwest side of Webster road, 70 feet southwest of farmhouse in root on east side of 36-inch hackberry tree; copper nail and washer, marked "U. S. T. B. M. 482.5." Elevation 482.30 feet (147.005 meters).			
Stithton, 6.3 miles northeast of, 30 feet northwest of road, 25 feet southwest of gate in front of A. L. Davis's residence, 6 feet south of fence; iron post stamped "Prim. Trav. Sta. No. 197, 1918. Elev. 450." Elevation 450.073 feet (137.182 meters)	37 56 41.49	85 52 35.52	2,644

From post No. 199 along Webster road to Salt River—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Stithton, 6.3 miles northeast of, thence 0.2 mile southeast, on north side of Webster road, 50 feet east of wire fence south of Salt Run, in root on west side of 15-inch walnut tree; copper nail and washer, marked "U. S. T. B. M. 442.9." Elevation 442.71 feet (134.938 meters).			
South side of road, 150 feet east of residence of W. P. Wise; hub	37 56 30.18	85 51 53.31	3,571
Stithton, 6.3 miles northeast of, thence 0.6 mile southeast, on north side of Webster road, in bed of drain from south, on sandstone boulder; chiseled square, marked "U. S. T. B. M. 457.4." Elevation 457.18 feet (139.349 meters).			
Stithton, 6.3 miles northeast of, thence 1.2 miles southeast, on south side of Webster road, at old road north to Salt River; iron post stamped "Prim. Trav. Sta. No. 196, 1918. Elev. 434." Elevation 433.708 feet (132.195 meters)	37 56 14.56	85 51 25.94	2,705

Magnetic declination, 0° 42′ E.

From post No. 154 east and south to post No. 201.

Primary traverse by O. B. Walsh in 1918; primary leveling by E. E. Harris in 1918.

Harboldt School, 0.8 mile east of, on south side of Guthrie Ridge, north side of road, in line with T lane south; iron post stamped "Prim. Trav. Sta. No. 154, 1918. Elev. 786." Elevation 786.599 feet (239.756 meters)	37 56 46.40	85 55 15.41	.....
Dead tree, 10 feet northwest of, tree with red and white target	37 56 49.58	85 55 07.90	684
Artillery Range Signal No. 9; iron post stamped "Art. Tri. Sta. No. 9, 1918. Elev. 819." Elevation 818.316 feet (249.423 meters)	37 56 47.11	85 55 04.33	380
Center of old road, near target on hillside facing north; hub	37 56 38.53	85 54 41.99	1,989
Artillery Range Signal No. 10; iron post stamped "Art. Tri. Sta. No. 10, 1918. Elev. 723." Elevation 722.295 feet (220.156 meters)	37 56 36.25	85 54 37.04	458
Walnut tree, 10 feet north of, 90 feet east of barn, tree blazed and marked "U. S."; hub	37 56 44.05	85 54 23.47	1,345
Artillery Range Signal No. 10, 0.4 mile northeast of, 60 feet south of barn, on south side of canyon, 5 feet west of p. t. hub, top of rock outcrop; chiseled square, marked "U. S. T. B. M. 650". Elevation 649.64 feet (198.01 meters).			
West bank of Salt River near fallen willow tree, 80 feet south of ravine; hub	37 56 40.09	85 54 16.40	693
Artillery Range Signal, No. 10, 0.4 mile northeast of, thence 0.4 mile south, on southwest side of Salt River, on south side of Bundel Creek at its mouth, in hub; copper nail and washer, marked "U. S. T. B. M. 377.2," water "373.7." Elevation 376.86 feet (114.867 meters).			
Near tree blazed "U. S.," on south bank of Mill Creek and west bank of Salt River; hub	37 56 29.21	85 54 18.05	1,107
Stithton, 0.5 mile northeast of, along Webster road, thence 1.3 miles west, in field, about 20 feet northwest of road up Mill Creek, 100 feet east of Bundel Creek; iron post stamped "Prim. Trav. Sta. No. 201, 1918. Elev. 417." Elevation 416.662 feet (126.999 meters)	37 56 01.30	85 54 23.19	2,850

Magnetic declination, 0° 31′ E.

From West Point southeast along river road to post No. 113.

Primary traverse by E. C. Bebb in 1918; primary leveling by E. E. Harris in 1918.

On Illinois Central R. R.; hub	37 59 46.27	85 56 56.63	.....
West Point, in front of Illinois Central R. R. station; top of rail. Elevation 442.0 feet (134.7 meters).			
West Point, in front of Louisville, Henderson & St. Louis R. R. station; top of rail. Elevation 440.9 feet (134.4 meters).			
West Point, at crossroads, 60 feet northwest of Louisville, Henderson & St. Louis R. R. depot; hub	37 59 39.34	85 56 49.73	892
West Point, center of road, at T road north	37 59 45.79	85 56 29.98	1,709
West Point, 0.5 mile southeast of, 10 feet southwest of west end of trestle approach to Louisville, Henderson & St. Louis R. R. branch over Salt River, at overhead crossing; iron post stamped "Prim. Trav. Sta. No. 115, 1918. Elev. 445." Elevation 445.070 feet (135.657 meters)	37 59 45.93	85 56 12.92	1,365
West Point, 0.9 mile southeast of, on northeast edge of road along southwest side of Salt River, in top of large sandstone boulder; chiseled square, marked "U. S. T. B. M. 433.0." Elevation 432.98 feet (131.973 meters).			

From West Point southeast along river road to post No. 113—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
East side of road, 67 feet east of road leading to house on north side; hub	37 59 21.72	85 55 40.93	3,543
West Point, 1.3 miles southeast of, on northeast edge of road, on southeast edge of road northeast, in root on south side of 12-inch walnut tree; copper nail and washer, marked "U. S. T. B. M. 462.6." Elevation 462.59 feet (140.998 meters).			
Bridge	37 59 18.02	85 55 35.94	548
Road northwest to house; hub	37 59 14.77	85 55 24.35	984
West Point, 1.9 miles southeast of, on northeast side of road, on east side of lane north, in hub; copper nail and washer, marked "U. S. T. B. M. 462.5." Elevation 462.58 feet (140.995 meters)	37 59 13.00	85 55 10.57	1,117
West Point, 1.9 miles southeast of, north side of road, opposite Corey road, at T road southwest; iron post stamped "Prim. Trav. Sta. No. 116, 1918. Elev. 471." Elevation 471.117 feet (143.597 meters)	37 59 11.35	85 55 06.42	372
West Point, 1.5 miles south by 0.6 mile east of Louisville, Henderson & St. Louis R. R. station, at southeast corner of T road south, Corey road; iron post stamped "Prim. Trav. Sta. No. 117, 1918. Elevation 668.976 feet (203.904 meters)	37 58 44.85	85 55 37.30	3,647
West Point, 1.5 miles south of Louisville, Henderson & St. Louis R. R. station, on east side of Hale road, in center of triangle made by T road east to Corey road; iron post stamped "Prim. Trav. Sta. No. 113, 1918." Elev. 684. Elevation 684.191 feet (208.542 meters)	37 58 46.48	85 56 09.84	2,611

From West Point south along Illinois Central R. R. to post No. 101.

East rail of Illinois Central R. R., at point of switch south of switch tower	37 59 29.95	85 57 00.83	.....
East rail at road crossing	37 59 22.96	85 57 02.39	718
Center of track at road crossing	37 59 04.00	85 57 06.61	1,947
West Point, 0.15 mile southwest of, thence 0.5 mile south on east side of Illinois Central R. R. track, in northeast corner of lane crossing, in top of concrete culvert; chiseled square, marked "U. S. T. B. M. 442.7." Elevation 442.71 feet (134.938 meters).			
West rail, at north end of 385-foot trestle	37 58 45.28	85 57 06.08	1,893
West Point, 0.15 mile southwest of, thence 0.8 mile south, in center of west edge of crossroad plank; copper nail and washer, marked "U. S. T. B. M. 454.4." Elevation 454.46 feet (138.519 meters).			
On bank, west of semaphore; hub	37 58 37.29	85 57 05.94	808
West Point, 1.3 miles south of, about 1,000 feet west of Illinois Central R. R., 150 feet east of large beech tree, on east and west fence line; iron post stamped "Prim. Trav. Sta. No. 124, 1918. Elev. 453.134 feet (138.116 meters)	37 58 46.18	85 57 18.57	1,353
West Point, 0.15 mile southeast thence 1.5 miles south of, in center of east guard at trestle; iron bolt, marked "U. S. T. B. M. 484.9." Elev. 484.90 feet (147.798 meters).			
On south side of road; hub	37 58 26.77	85 57 19.46	1,965
Iron post No. 101 (previously described)	37 58 06.96	85 57 38.95	2,540

Magnetic declination, 2° 17′ E.

From post No. 104 along Tip Top road to post No. 176.

Primary traverse by O. B. Walsh in 1918; primary leveling by E. E. Harris in 1918.

Iron post No. 104 (previously described)	37 56 23.45	85 56 59.77	.....
Tip Top, 1.2 miles northeast of, 0.7 mile west of Dixie Highway, on north side of road, on west edge of lane to farm house, in root on south side of large oak tree; copper nail and washer, marked "U. S. T. B. M. 759.4." Elevation 759.45 feet (231.481 meters).			
T. b. m. on north end of small bridge	37 56 06.87	85 57 32.46	3,110
T road north, opposite t. b. m.; hub	37 56 03.89	85 57 36.31	430
Tip Top, 0.9 mile northeast of, on southeast side of road opposite farm gate, in hub; copper nail and washer, marked "U. S. T. B. M. 760.4." Elevation 760.45 feet (231.785 meters)	37 55 51.90	85 57 50.22	1,648
On mound in road, near blazed telegraph pole; hub	37 55 41.91	85 57 58.01	1,187
Tip Top, about 0.5 mile northeast of, in north corner of large grass triangle at road forks, 16 feet southeast of center of Tip Top road; iron post stamped "Prim. Trav. Sta. No. 140, 1918. Elev. 763." Elevation 763.218 feet (232.629 meters)	37 55 35.20	85 57 58.88	682
Opposite farm road south	37 55 23.85	85 58 16.01	1,789
Tip Top, 0.2 mile northeast of, on northwest edge of road, in center of northwest end of wooden culvert; copper nail and washer, marked "U. S. T. B. M. 754.1." Elevation 754.19 feet (229.878 meters).			

From post No. 104 along Tip Top road to post No. 176—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
West rail of main line of Illinois Central R. R., at center of road crossing, 400 feet south of Tip Top station	37 55 13.81	85 58 30.63	1,550
Tip Top, 300 feet northwest of station, at right angle turn in road; iron post stamped "Prim. Trav. Sta. No. 141, 1918. Elev. 782." Elevation 781.640 feet (238.244 meters)	37 55 18.77	85 58 36.83	706
Tip Top, 0.3 mile southwest of, 300 feet northeast of Tip Top School, on southeast side of road, south corner at private road southeast, in west corner of concrete wall; chiseled square, marked "U. S. T. B. M. 766.1." Elevation 766.87 feet (233.742 meters).			
South side of road, opposite schoolhouse; hub	37 55 05.40	85 58 54.72	1,910
Iron post No. 142 (previously described)	37 55 00.42	85 59 01.84	761
North side of road, at turn; hub	37 54 52.13	85 59 16.30	1,430
Iron post No. 176 (previously described)	37 54 44.16	85 59 39.37	2,017

Magnetic declination, 1° 06′ E.

Post No. 108 (previously described)	37 53 52.95	85 57 02.00	.....
Stithton, 0.4 mile northeast thence 0.3 mile north of, on west side of road, opposite gate to field, hub; copper nail and washer, marked "U. S. T. B. M. 731.8." Elevation 731.87 feet (223.074 meters)	37 54 06.68	85 57 06.89	1,443
East side of road; hub	37 54 13.02	85 57 08.82	660
Stithton, 0.4 mile northeast thence 0.5 mile north of, on west side of road, in line with south edge of T lane east along timber line on top of drain pipe; chiseled square, marked "U. S. T. B. M. 724.7." Elevation 724.81 feet (220.923 meters).			
Farm road west; hub	37 54 24.58	85 57 13.54	1,229
Stithton, about 1.3 miles north of, on east side of road, at south edge of farm road gate; iron post stamped "Prim. Trav. Sta. No. 138, 1918. Elev. 742.6." Elevation 742.619 feet (226.351 meters)	37 54 41.47	85 57 19.08	1,765
Stithton, 1.5 miles north of, on southwest edge of road, 100 feet north of angle in road, in center of west end of wooden culvert; copper nail and washer, marked "U. S. T. B. M. 750.4." Elevation 750.43 feet (228.731 meters).			
Center of small bridge	37 54 59.91	85 57 32.84	2,166
Stithton, 1.7 miles north of, on west edge of road, in center of top of wooden culvert; copper nail and washer, marked "U. S. T. B. M. 748.7." Elevation 748.77 feet (228.226 meters).			
Road crossing, 16 feet south of t. b. m.; hub	37 55 05.19	85 57 37.28	642
Tip Top, about 0.5 mile southeast of, in large grass triangle, 8 feet northwest of tree; iron post stamped "Prim. Trav. Sta. No. 139, 1918. Elev. 763." Elevation 762.904 feet (232.534 meters)	37 55 05.15	85 57 59.10	1,749
Post No. 140 (previously described)	37 55 35.20	85 57 58.88	3,040

Magnetic declination, 0° 50′ E.

From post No. 100 along Louisville, Henderson & St. Louis R. R. and highways to post No. 101.

Primary traverse by Capt. E. C. Bebb in 1918.

Post No. 100 (previously described)	37 59 21.08	85 57 41.24	.....
T road north through gate; hub	37 59 16.48	85 58 16.00	2,822
Howard station, 0.6 mile west of, 30 feet east of milepost 24, in center of east horizontal support to target switch; copper nail and washer, marked "U. S. T. B. M. 438.2." Elevation 438.23 feet (133.573 meters).			
Howard, 1 mile west of, 10 feet south of railroad crossing, on west side of road; iron post stamped "Prim. Trav. Sta. No. 120, 1918. Elev. 437." Elevation 436.983 feet (133.193 meters)	37 59 12.20	85 58 51.85	2,902
Howard, 1.4 miles west of, at farm-road crossing, in west end of crossroad plank, on inner side of south rail; copper nail and washer, marked "U. S. T. B. M. 437.4." Elevation 437.40 feet (133.320 meters).			
South rail at farm-road crossing	37 59 10.28	85 59 12.52	1,667
Howard, 1.7 miles west of, 320 feet west of milepost 25, at road crossing, 12 feet north of track; iron post stamped "Prim. Trav. Sta. No. 121, 1918." Elev. 437. Elevation 436.578 feet (133.069 meters)	37 59 11.79	85 59 33.49	1,687
T road north; hub	37 59 00.12	85 59 22.75	1,459
Howard, 1.7 miles west thence 0.3 mile south of, at forks of road, on south edge of road, in line with road north, in hub; copper nail and washer, marked "U. S. T. B. M. 425.7." Elevation 425.74 feet (129.766 meters).			
Farm road west	37 58 50.42	85 59 14.18	1,196

From post No. 100 along Louisville, Henderson & St. Louis R. R. and highway to post No. 101—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Hub	37 58 42.80	85 59 07.17	953
Tioga, 1.4 miles northwest of, at base of high bluff, on southwest side of road running southeast, in line with road east; iron post stamped "Prim. Trav. Sta. No. 122, 1918. Elev. 409." Elevation 409.486 feet (124.811 meters)	37 58 25.66	85 59 23.12	2,153
T road north, at gate; hub	37 58 18.22	85 59 06.73	1,513
Tioga, 1.1 miles northwest of, on south edge of road, near gate post, 10 feet west of T lane north, in hub; copper nail and washer, marked "448.9." Elevation 448.96 feet (136.843 meters).			
Tioga, 0.7 mile northwest of, on south edge of road, at fence post, in hub; copper nail and washer, marked "450.2." Elevation 450.20 feet (137.221 meters).			
T road south, hub	37 58 04.03	85 58 11.25	.....
Tioga, 0.2 mile northwest of, on north edge of road, 3 feet east of gate post, in hub; copper nail and washer, marked "439.0." Elevation 439.07 feet (133.829 meters).			
Tioga, about 700 feet north of, on north side of main road in line with T road south; iron post stamped "Prim. Trav. Sta. No. 123, 1918. Elev. 465." Elevation 464.888 feet (141.698 meters)	37 58 03.62	85 57 59.60	934
Tioga, about 0.2 mile east of, on north side of road, in line with road southwest, on sandstone boulder; chiseled square, marked "U. S. T. B. M. 473.2." Elevation 473.27 feet (144.253 meters).			
Iron post No. 101 (previously described)	37 58 06.96	85 57 38.95	1,687

Magnetic declination, 1° 24′ E.

From post No. 140 along highways to post No. 151.

Primary traverse by O. B. Walsh in 1918; primary leveling by R. B. Steele in 1918.

Post No. 140 (previously described)	37 55 35.20	85 57 58.88	.....
Tip Top, 0.5 mile northeast of, on northwest side of road, at northeast end of gate, near top of hill, in hub; copper nail and washer; a gate post 2 feet west is marked "U. S. T. B. M. 779.1." Elevation 779.32 feet (237.538 meters).			
Tip Top, 1.0 mile northeast of, on west edge of road, in line with T road east, at northwest corner of an old orchard, top of stake; copper nail and washer; a gate post 15 feet south is marked "U. S. T. B. M. 762.5." Elevation 762.61 feet (232.444 meters).			
In field, 30 feet from edge of woods, witness stake, marked "U. S."; in hub	37 55 45.64	85 58 16.40	1,757
T. b. m., center of road, at red farm gate; hub	37 55 59.43	85 58 18.63	1,407
Kendall's farmhouse, 10 feet south of milk house; hub	37 56 08.84	85 58 08.33	1,260
Muldraugh, 1.5 miles northeast of, thence 0.4 mile south, on east side of road at forks east, in hub; copper nail and washer; a 14-inch oak tree 15 feet west is marked "U. S. T. B. M. 767.5." Elevation 767.65 feet (233.980 meters).			
Road forks; t. b. m., hub	37 56 10.53	85 58 15.28	582
South side of road, 27 feet east of t. b. m., at farm gate; hub	37 56 17.63	85 58 15.06	720
Post No. 151 (previously described)	37 56 26.39	85 58 15.95	889

Magnetic declination, 1° 00′ E.

From post No. 117 south along Corey road to post No. 154.

Primary leveling by E. E. Harris; primary traverse by Capt. E. C. Bebb in 1918.

Post No. 117 (previously described)	37 58 44.85	85 55 37.30	.....
Opposite T road east; hub	37 58 36.41	85 55 33.38	910
Schoolhouse, 25 feet south of, opposite side of road; hub	37 58 24.78	85 55 27.09	1,279
Liberty Hill School, 100 feet south of, on west edge of Corey road, in root on east side of 20-inch locust tree; copper nail and washer, marked, "U. S. B. M. 720.3." Elevation 720.42 feet (219.584 meters).			

Primary traverse by O. B. Walsh in 1918.

Road forks; hub	37 58 14.36	85 55 16.75	1,340
Liberty Hill School, 0.24 mile south of, on Corey road, in center of grass triangle, in hub; copper nail and washer, marked "U. S. B. M. 686.1." Elevation, 686.22 feet (209.160 meters).			
Farm road west	37 58 06.57	85 55 19.73	824

From post No. 117 south along Corey road to post No. 154.—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Liberty Hill School, 0.5 mile south of, on Corey road, at southeast corner of T road south; iron post stamped "Prim. Trav. Sta. No. 127, 1918. Elev. 740." Elevation 740.225 feet (225.621 meters)	37 58 01.49	85 55 24.14	624
Liberty Hill School, 0.8 mile south of, in south end of grass triangle, in hub; copper nail and washer, marked "U. S. T. B. M. 736.2." Elevation 736.34 feet (224.437 meters).			
T road west; hub	37 57 47.00	85 55 20.56	1,493
Farm-road crossing	37 57 30.67	85 55 23.53	1,669
Liberty Hill School, 1.2 miles south of, at southwest corner of cross lane, in root on north side of 15-inch oak tree; copper nail and washer, marked "U. S. T. B. M. 780.0." Elevation 780.12 feet (237.781 meters).			
T road east; in hub	37 57 12.86	85 55 24.01	1,802
Liberty Hill School, 1.5 miles south of, at road crossing, in center of grass triangle, in hub; copper nail and washer, marked "U. S. T. B. M. 756.8." Elevation 756.92 feet (230.709 meters).			
Artillery Range Signal No. 1; iron post stamped "Art. Tri. Sta. No. 1, 1918. Elev. 766." Elevation 765.860 feet (233.435 meters)	37 57 11.70	85 55 20.17	328
Post No. 154 (previously described)	37 56 46.40	85 55 15.41	2,587

Magnetic declination, 1° 05′ E.

From post No. 116 south along highways to Artillery Range Signal No. 1.

Primary traverse by Capt. E. C. Bebb in 1918.

Post No. 116 (previously described)	37 59 11.35	85 55 06.42	.....
West Point, 2.2 miles southeast of, in northeast corner of lane north, in hub; copper nail and washer, marked "U. S. T. B. M. 468.2." Elevation 468.22 feet (142.714 meters).			
North edge of road, 6 feet east of center of farm road north	37 59 10.09	85 54 49.09	1,392
North bank of road, 55 feet east of T road south; hub	37 59 08.68	85 54 39.51	779
Center of main road, 18 feet west of, 14 feet east of center of second-class T road west	37 58 57.98	85 54 42.14	1,102
East edge of main road, at center of T road east	37 58 57.03	85 54 36.24	482
West Point, 2.4 miles southeast of, thence 0.9 mile south, opposite Y road fork, at road southwest, in hub; copper nail and washer, marked "U. S. T. B. M. 462.0." Elevation 462.05 feet (140.833 meters).			
T road west, 75 feet north of; hub	37 58 36.86	85 54 46.59	2,202
Gate to frame house, 110 feet south of, on east side of road; hub	37 58 27.31	85 54 47.57	969
West Point, 2.4 miles southeast of, thence 1.4 miles south, on road up the west side of Salt River, at northwest corner of road forks west; iron post stamped "Prim. Trav. Sta. No. 136, 1918. Elev. 462." Elevation 462.005 feet (140.820 meters)	37 58 10.86	85 54 43.51	1,695
West side of road; hub	37 57 59.63	85 54 43.61	1,136

Primary traverse by O. B. Walsh in 1918.

East side of road, 180 feet south of farmhouse; hub	37 57 43.20	85 54 36.59	1,754
South end of small bridge, 2 feet east of center of road; nail	37 57 34.65	85 54 38.75	882
West Point, 2.4 miles southeast of, thence 2.0 miles south, 30 feet east of center of road, 60 feet west of barn, in root on south side of 8-inch hickory tree; copper nail and washer, marked "U. S. T. B. M. 455.4." Elevation 455.46 feet (138.824 meters).			
West Point, 2.4 miles southeast of, thence 2.4 miles south, on west side of road, 200 feet south of farm house, at northeast corner of barn, in hub; copper nail and washer, marked "U. S. T. B. M. 450.7." Elevation 450.76 feet (137.392 meters).			
Artillery Range Signal No. 3; iron post stamped "Art. Tri. Sta. No. 3, 1918. Elev. 636." Elevation 635.923 feet (193.830 meters)	37 57 20.46	85 54 32.11	1,531
West Point, 1.5 miles south of, thence 0.8 mile east, at Artillery Range Signal No. 3, in hub; copper nail and washer, marked "635.6." Elevation 635.60 feet (193.731 meters).			
South side of road, near curve, in hub	37 57 15.15	85 54 57.10	2,073
North side of road, near blazed beech tree, in hub	37 57 14.13	85 55 11.81	1,183
Artillery Range Signal No. 1 (described elsewhere)	37 57 11.70	85 55 20.17	714

Magnetic declination, 0° 43′ E.

From post No. 165 along highways to post No. 172.

Primary traverse by H. S. Senseney in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Post No. 165 (previously described)	38 00 56.71	85 54 00.11	.....
Stites, 0.3 mile southeast of, thence 0.4 mile south, in center of grass triangle, in hub; copper nail and washer, marked "U. S. T. B. M. 466.0." Elevation 466.03 feet (142.046 meters).			
Road forks, northeast corner of, 20 feet north of birch tree; hub	38 00 32.90	85 54 00.17	2,408
Stites, 0.3 mile southeast of, thence 0.8 mile south, in elbow of road, on west side, in root on east side of 24-inch beech tree; copper nail and washer, marked "U. S. T. B. M. 440.9." Elevation 440.92 feet (134.392 meters).			
Small white house, 30 feet south of gate to, west side of road; hub	38 00 14.25	85 54 14.11	2,191
Road, east side of, 12 feet south of small wooden culvert; hub	38 00 01.36	85 53 59.34	1,760
Stites, 0.3 mile southeast of, thence 1 mile south, on west side of road, in bend, on top of sandstone boulder; chiseled square, marked "U. S. T. B. M. 599.2." Elevation 599.16 feet (182.625 meters).			
East side of road, 35 feet south of lane east through gate; hub	37 59 51.38	85 53 52.00	1,168
Stites station, 0.3 mile southeast of, thence 1.6 miles south, on south edge of Highland Ridge road, at south side of T road north; iron post stamped "Prim. Trav. Sta. No. 173, 1918. Elev. 743." Elevation 743.105 feet (226.499 meters)	37 59 44.09	85 53 52.28	737
Stites, 1.4 miles south of, thence 0.3 mile west along Highland Ridge road, in forks at road northwest, in hub; copper nail and washer, marked "U. S. T. B. M. 778.4." Elevation 778.44 feet (237.269 meters).			
North side of road, at road forks; hub	37 59 51.10	85 54 12.75	1,785
Stites, 1.9 miles south of, thence 0.6 mile west along Highland Ridge road, on south side, in top of wooden culvert, point marked "U. S. T. B. M. 668.8." Elevation 668.85 feet (203.866 meters).			
North side of road, 15 feet west of road forks; hub	38 00 03.08	85 54 36.97	2,287
Katharyn, 0.6 mile southeast of, thence 1 mile northeast along Highland Ridge road, on north side, in line with farm road south, in root on east side of 8-inch locust tree; copper nail and washer, marked "U. S. T. B. M. 744.6." Elevation 744.65 feet (226.970 meters).			
West side of road, at road forks; hub	38 00 05.05	85 54 47.24	846
At center of road forks; hub	38 00 03.87	85 54 55.97	708
Katharyn, 0.6 mile southeast of, thence 0.7 mile northeast along Highland Ridge road, in center of grass triangle, in hub; copper nail and washer, marked "U. S. T. B. M. 712.0." Elevation 711.99 feet (217.015 meters).			
South side of road, at road forks; hub	37 59 46.36	85 55 20.76	2,658
Katharyn, 0.6 mile southeast of, post No. 172 (previously described)	37 59 41.53	85 55 27.58	733

Magnetic declination, 0° 34′ E.

From post No. 186 northeast through fields and woods to the Ridge road.

Post No. 186 (previously described)	37 58 08.36	85 52 43.37	.....
Hub with flag	37 58 24.77	85 52 34.05	1,820
Creek, at north side of; hub with flag	37 58 33.55	85 52 43.27	1,156
Chapel Ridge School, 1.4 miles north of, 180 feet east of P. C. Arnold's barn, on east side of old road leading to Ridge road, in line with road up mountain side; iron post stamped "Prim. Trav. Sta. No. 195, 1918. Elev. 477." Elevation 477.02 feet (145.396 meters)	37 58 39.84	85 52 38.62	737
South side of road, at forks of old road and trail; hub	37 58 57.93	85 52 20.79	2,321
West side of road, at T road west; hub	37 59 06.41	85 52 12.77	1,072

Magnetic declination, 0° 19′ E.

From point on Dixie Highway about 3.5 miles south of West Point east and north via Hale road to West Point.

Primary traverse by Capt. E. C. Bebb in 1918; primary leveling by E. E. Harris in 1918.

Hale road, on west side of Dixie Highway opposite; cross on rock	37 56 50.69	85 57 01.90	.....
Center line of small bridge	37 56 54.25	85 56 47.91	1,178

From post on Dixie Highway about 3.5 miles south of West Point east and north via Hale road to West Point—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
West Point, 4.3 miles south of, on Dixie Highway, thence 0.2 mile east on Hale road, 0.1 mile east of Pleasant View Church, at southeast corner of wooden bridge, in top of large sandstone boulder; cross in chiseled square, marked "U. S. T. B. M. 688.6." Elevation 688.66 feet (209.904 meters).			
Point where stream running along road turns southwest	37 56 56.34	85 56 36.29	956
Pleasant View Church, 0.5 mile east of, about 0.75 mile east of Dixie Highway, on south side of Hale road, at road forks; iron post stamped "Prim. Trav. Sta. No. 111, 1918. Elev. 744." Elevation 743.616 feet (226.655 meters)	37 57 03.34	85 56 22.69	1,300
Pleasant View Church, 0.5 mile east of, thence 0.5 mile north, 12 feet west of center line of Hale road, on center line of farm road northwest, on fence line, in hub; copper nail and washer, marked "U. S. T. B. M. 737.9." Elevation 737.99 feet (224.940 meters)	37 57 23.17	85 56 16.59	2,064
Pleasant View Church, 0.5 mile east of, thence 0.7 mile north, in center of Hale road, 25 feet south of stream crossing, on top of sandstone ledge; cross in chiseled square, marked "U. S. T. B. M. 693.8." Elevation 693.86 feet (211.489 meters)			
Stream crossing, 42 feet south by 12 feet east of; hub	37 57 37.69	85 56 06.98	1,658
West Point, 2.75 miles south of, on Hale road, at northeast corner of T road east, in southwest corner of grass triangle; iron post stamped "Prim. Trav. Sta. No. 112, 1918. Elev. 747." Elevation 747.110 feet (227.720 meters)	37 57 49.32	85 56 01.84	1,246
T road west; in hub	37 57 57.13	85 56 01.13	792
Opposite road through field east; hub	37 58 03.76	85 56 02.50	679
T road west; in hub	37 58 09.33	85 56 03.17	567
West Point, 1.7 miles south of Louisville, Henderson & St. Louis R. R. station, on west bank of Hale road, 30 feet north of farm road through orchard, in root on south side of 24-inch beech tree; copper nail and washer, marked "U. S. T. B. M. 686.0." Elevation 686.01 feet (209.096 meters).			
West Point, 2.2 miles south of Louisville, Henderson & St. Louis R. R. station, on west edge of Hale road, on south edge of farm road west, in root on east side of 12-inch oak tree; copper nail and washer, marked "U. S. T. B. M. 725.4." Elevation 725.37 feet (221.093 meters).			
West Point, 1.46 miles south of Louisville, Henderson & St. Louis R. R. station, on east side of Hale road, in center of west edge of grass triangle, at fork east to Corey road; iron post stamped "Prim. Trav. Sta. No. 113, 1918. Elev. 684." Elevation 684.191 feet (208.542 meters)	37 58 46.48	85 56 09.84	3,796
T road east through field	37 58 54.43	85 56 14.42	884
Farm road west	37 59 05.74	85 56 26.36	1,491
West Point, 0.8 mile south of Louisville, Henderson & St. Louis R. R. station, in west end of cross beam of wooden culvert, on west edge of Hale road, at farm road west, in hub; copper nail and washer, marked "U. S. T. B. M. 716.6." Elevation 716.64 feet (218.432 meters).			
T road southwest; hub	37 59 15.26	85 56 28.62	980
T road east; hub	37 59 18.08	85 56 28.03	290
West Point, 0.6 mile south of Louisville, Henderson & St. Louis R. R. station, 40 feet north of center of Hale road, 12 feet south of large birch tree, 75 feet south of gray-colored house; iron post stamped "Prim. Trav. Sta. No. 114, 1918. Elev. 652." Elevation 651.757 feet (198.656 meters)	37 59 24.57	85 56 33.65	735
T road east; in hub	37 59 25.03	85 56 49.10	1,238
West Point, 0.4 mile south of Louisville, Henderson & St. Louis R. R. station, in Y forks of roads, on top of sandstone ledge; cross in chiseled square, marked "U. S. T. B. M. 443.3." Elevation 443.33 feet (135.127 meters).			
Road forks	37 59 25.83	85 56 57.19	659
East rail of Illinois Central R. R., at point of switch south of switch tower	37 59 29.95	85 57 00.83	476
West Point, 0.1 mile south of Louisville, Henderson & St. Louis R. R. station, at northeast corner of crossing of Hale road and railroad; top of section of rail set vertically, marked "U. S. T. B. M. 439.6." Elevation 439.56 feet (133.978 meters).			
Intersection of east rail of Illinois Central R. R. and south rail of Louisville, Henderson & St. Louis R. R.	37 59 32.93	85 57 00.17	306
South end of trestle 304 feet long, on east rail	37 59 37.90	85 56 59.07	510
Point of switch, east rail of Illinois Central R. R.	37 59 41.35	85 56 58.30	354
On edge of embankment, east of siding of Illinois Central R. R.	37 59 46.27	85 56 56.63	515
Post No. 34, West Point (Bull. 310, p. 23) (previously described)	37 59 54.10	85 56 57.92	799

Magnetic declination, 1° 07′ E.

From post No. 129 northwest to west border of quadrangle.

Primary leveling by E. E. Harris in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Post No. 129 (previously described)	37 57 13.70	85 59 51.42	.....
Muldraugh, 0.1 mile west of, thence 1.2 miles north, in northwest angle at forks of lane southwest, in root on east side of 15-inch sycamore tree; copper nail and washer, marked "U. S. T. B. M. 736.1." Elevation 736.22 feet (224.400 meters).			
Farm road west	37 57 26.03	85 59 56.62	1,315

From post No. 105 east and north via highways to post No. 154.

Primary traverse by H. S. Senseney in 1918; primary leveling by R. B. Steele in 1918.

Post No. 105 (previously described)	37 56 01.86	85 56 57.52	.....
Stithton, 3.2 miles northeast of, on Dixie Highway, thence 0.5 mile east, in center of Wilder road, in line with T road south, in hub; copper nail and washer; a fence post 15 feet east is marked "U. S. T. B. M. 774.8." Elevation 774.83 feet (236.169 meters).			
Wilder road, at T road south; hub	37 56 00.93	85 56 23.69	2,713
Stithton, 3.5 miles northeast of, 0.7 mile east of Dixie Highway, on south side of Wilder road, 25 feet east of gate; iron post stamped "Prim. Trav. Sta. No. 152, 1918. Elev. 774." Elevation 773.935 feet (235.896 meters)	37 56 04.17	85 56 11.97	995
South side of Wilder road, at top of hill; hub	37 56 00.19	85 55 43.81	2,292
Stithton, 4 miles northeast of, 1.2 miles east of Dixie Highway, on south side of Wilder road, at break of hill, top of hub: copper nail and washer; a 5-inch oak tree 10 feet northeast is marked "U. S. T. B. M. 741.5." Elevation 741.52 feet (226.015 meters).			
Stithton, 4.5 miles northeast of, 1.6 miles east of Dixie Highway, on south side of Wilder road, near foot of hill, in base of south gate post; wire nail, post is marked "U. S. T. B. M. 461.1." Elevation 461.10 feet (140.543 meters).			
Stithton, 4.6 miles northeast of, on north side of Wilder road, 200 feet west of forks; iron post stamped "Prim. Trav. Sta. No. 153, 1918. Elev. 418." Elevation 422.432 feet (128.758 meters)	37 55 51.53	85 55 12.78	2,636
East side of road, at old road forks; hub	37 56 04.77	85 55 10.21	1,355
Stithton, 4.5 miles northeast of, 0.4 mile north of Wilder road, on west side of road, at T road east, in root of 14-inch hickory tree; wire nail; tree marked "614.4." Elevation 614.40 feet (187.270 meters).			
Artillery Range Signal No. 8; iron post stamped "Art. Tri. Sta. No. 8, 1918. Elev. 776." Elevation 776.296 feet (236.615 meters).	37 56 29.74	85 55 20.21	2,650
Stithton, 4.7 miles northeast of, 0.7 mile north of Wilder road, at top of hill, on east side of road, in root of 40-inch oak tree. Elevation 771.64 feet (235.196 meters).			
East side of road, at road east to house; hub	37 56 37.33	85 55 13.79	925

From post No. 154 west and north to post No. 111.

Primary leveling by E. E. Harris in 1918.

Iron post No. 154 (previously described)	37 56 46.40	85 55 15.41	926
Harboldt School, 0.5 mile east of, in southeast corner of T road south, in hub; copper nail and washer, marked "U. S. T. B. M. 735.9." Elevation 736.03 feet (224.342 meters).			
North side of road, at T road south; hub	37 56 40.55	85 55 33.54	1,568
Harboldt School, 0.2 mile east of, on north edge of road, at forks of drain, in bed of drain to northeast, on top of sandstone ledge; chiseled square, marked "U. S. T. B. M. 705.2." Elevation 705.38 feet (215.000 meters).			
North side of road, at top of hill, at road south through gate; hub	37 56 46.18	85 55 56.08	1,892
Harboldt, in front of school, north side of road, on top of sandstone outcrop; marked square "734.2." Elevation 734.36 feet (223.834 meters).			
South side of road, in line with T road north; hub	37 56 39.02	85 56 15.67	1,728
Harboldt School, 0.2 mile west of, on south side of road, in line with T road north, in hub; copper nail and washer, marked "U. S. B. M. 730.7." Elevation 730.89 feet (222.775 meters).			
Post No. 111 (previously described)	37 57 03.34	85 56 22.69	2,524

Magnetic declination, 0° 47′ E.

From post No. 198 west via highways to post No. 202.

Primary traverse by O. B. Walsh in 1919.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Post No. 198 (previously described)	37 55 47.81	85 53 06.52	.....
North side of road, west of fence; in hub	37 55 58.38	85 53 28.73	2,076
Stithton, 5.0 miles northeast of, on Webster road, thence 1 mile west, on north side of road, 8 feet southeast of barn, in hub; copper nail and washer, marked "U. S. T. B. M. 451.3." Elevation 451.06 feet (137.483 meters).			
Post No. 201 (previously described)	37 56 01.30	85 54 23.19	4,375
Post No. 202 (previously described)	37 55 39.76	85 54 46.67	2,879

From post No. 202 to signal No. 22.

Artillery Range Signal No. 22; iron post stamped "Art. Tri. Sta. No. 22, 1918. Elev. 603." Elevation 602.921 feet (183.771 meters)	37 55 43.58	85 54 43.05	483

From point near post No. 159 to signal No. 15.

Artillery Range Signal No. 15; iron post stamped "Art. Tri. Sta. No. 15, 1918. Elev. 710." Elevation 710.332 feet (216.510 meters)	37 55 22.05	85 55 06.86	3,173

From post No. 181 northeast and northwest along highways to post No. 167.

Primary traverse by H. S. Senseney in 1918.

Post No. 181 (previously described)	37 59 12.81	85 51 18.83	.....
Mount Olive School, 80 feet east of, on north side of road, in root on east side of 15-inch oak tree; copper nail and washer, marked "U. S. T. B. M. 818.3." Elevation 818.19 feet (249.385 meters).			
Mount Olive School, 0.2 mile northeast of, south side of Highland Ridge road, at road forks north, at G. L. Gibson's residence; iron post stamped "Prim. Trav. Sta. No. 182, 1918. Elev. 862." Elevation 861.568 feet (262.606 meters)	37 59 24.16	85 50 43.58	3,047
Mount Olive School, 0.9 mile north of, on southwest side of road, in top of box culvert; copper nail and washer, marked "U. S. T. B. M. 804.0." Elevation 803.93 feet (245.038 meters).			
North side of road, west side of lane, 25 feet south of gate; hub	37 59 44.45	85 51 10.26	2,964
Stites station, 3.02 miles southeast of, thence 1 mile south, at forks of lane west, in east end of wooden culvert; copper nail and washer, marked "U. S. T. B. M. 787.2." Elevation 787.11 feet (239.912 meters).			

From post No. 189 south via abandoned road to Salt River.

Post No. 189 (previously described)	37 58 16.73	85 51 04.02	.....
Chapel Ridge School, 1.8 miles northeast of, thence 0.6 mile south, in northeast angle of forks at road east, in hub; copper nail and washer, marked "U. S. T. B. M. 493." Elevation 492.47 feet (150.258 meters).			
Foot of hill, near tobacco patch, in line with road north; hub	37 57 49.85	85 50 49.67	2,951
In field, 2 feet north of east-west wire fence; hub	37 57 24.22	85 50 57.37	2,663
Chapel Ridge School, about 1.5 miles southeast of, southwest side of river road, 20 feet southwest of Rareden road forks northeast; iron post stamped "Prim. Trav. Sta. No. 194, 1918. Elev. 449." Elevation 448.864 feet (136.814 meters)	37 57 07.01	85 50 57.63	1,739
South side of road, in line with road south; hub	37 57 00.86	85 50 50.33	852
Chapel Ridge School, 2.3 miles southeast of, 130 feet south of an old abandoned house, on bluff on north side of Salt River; t. b. m. in hub, copper nail and washer, marked "U. S. T. B. M. 439.1." Elevation 438.96 feet (133.796 meters)	37 56 43.80	85 51 14.04	2,566
Salt River, surface of water, August 30, 1918. Elevation 374.0 feet (114.0 meters).			

Magnetic declination, 0° 11′ E.

From point near post No. 159 to signal No. 15.

Primary traverse by O. B. Walsh in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Devore road, at west entrance to, on east side of Dixie Highway; t. b. m. Elevation 693.88 feet (211.495 meters).			
Artillery Range Signal No. 16; iron post stamped "Art. Tri. Sta. No. 16, 1918. Elev. 776." Elevation 776.401 feet (236.647 meters)	37 54 46.98	85 55 58.82	2,513

From point near post No. 159 to signal No. 17.

Artillery Range Signal No. 17; iron post stamped "Art. Tri. Sta. No. 17, 1918. Elev. 746.". Elevation 746.136 feet (227.423 meters)	37 55 00.34	85 55 13.45	1,371

From post No. 155 to post No. 123.

Primary traverse by Capt. E. C. Bebb in 1918; primary leveling by R. B. Steele in 1918.

Post No. 155 (previously described)	37 56 39.01	85 58 56.59	.....
Opposite T road north; in hub	37 56 45.52	85 58 31.60	2,107
Iron post No. 125 (previously described)	37 56 47.86	85 58 27.71	390
Southeast side of road, 5 feet north of gate to B. Robinson's house.	37 57 02.12	85 58 08.60	2,103
Muldraugh, 1.5 miles northeast of, on northwest side of road, at T road northwest, on top of stone; chiseled square; a gate 10 feet west is marked "U. S. T. B. M. 714. 5". Elevation 714.66 feet (217.829 meters).			
At farm road north; hub	37 57 09.39	85 58 03.11	856
Muldraugh, 2.0 miles northeast of, on east side of road, 15 feet north of T road west, in hub; copper nail and washer, marked "U. S. T. B. M. 687. 0". Elevation 687.19 feet (209.456 meters).			
At T road southwest; hub	37 57 32.69	85 57 53.92	2,468
Tioga station, 0.4 mile south of, 67 feet northeast of Shady Grove schoolhouse door, 20 feet west of road; iron post stamped "Prim. Trav. Sta. No. 126, 1918. Elev. 685". Elevation 685.315 feet (208.884 meters)	37 57 39.95	85 57 58.37	815
At T road east; hub	37 57 50.11	85 58 02.16	1,072
Tioga station, 0.2 mile south of, at break of hill, 100 feet north of road fork, on west side of road, in root of 40-inch oak tree; copper nail and washer; tree is marked "U. S. T. B. M. 668.5". Elevation 668.80 feet (203.851 meters).			
South end of bridge	37 57 55.45	85 58 07.19	674
Tioga station, on Illinois Central R. R.; top of south rail; a box culvert 30 feet south is marked "U. S. T. B. M. 558. 25". Elevation 558.5 feet (170.23 meters)	37 57 59.62	85 58 05.76	437
Post No. 123 (previously described)	37 58 03.62	85 57 59.60	637
Tioga, 0.3 mile northeast of, on north side of road, in road fork southwest, top of large boulder; chiseled square. Elevation 473.27 feet (144.253 meters).			

Magnetic declination, 0° 50′ E.

From hub at T road southwest on Hale road to signals Nos. 28 and 29.

Artillery Range Signal No. 28; iron post stamped "Art. Tri. Sta. No. 28, 1918. Elev. 769". Elevation 769.254 feet (234.469 meters)	37 59 24.12	85 56 05.55	2,053
Artillery Range Signal No. 29; iron post stamped "Art. Tri. Sta. No. 29, 1918. Elev. 749". Elevation 749.465 feet (228.437 meters)	37 59 28.51	85 55 57.55	779

From range point above to signal No. 26.

Primary traverse by O. B. Walsh in 1918.

Artillery Range Signal No. 26; iron post stamped "Art. Tri. Sta. No. 26, 1918. Elev. 729". Elevation 728.972 feet (222.191 meters)	37 58 54.85	85 56 43.86	2,398

From hub at T road west on Hale road to signal No. 32.

Primary traverse by Capt. E. C. Bebb in 1918.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Artillery Range Signal No. 32; iron post stamped "Art. Tri. Sta. No. 32, 1918. Elev. 750". Elevation 750.714 feet (228.818 meters)	37 58 02.62	85 55 53.84	1,009

From post No. 101 to signals Nos. 23 and 24.

Artillery Range Signal No. 24; iron post stamped "Art. Tri. Sta. No. 24, 1918. Elev. 725". Elevation 725.401 feet (221.103 meters)	37 58 07.64	85 57 11.73	2,181
Artillery Range Signal No. 23; iron post stamped "Art. Tri. Sta. No. 23, 1918. Elev. 756". Elevation 755.774 feet (230.360 meters)	37 57 50.38	85 56 44.60	2,787

From point on Hale road to signal No. 5.

Artillery Range Signal No. 5; iron post stamped "Art. Tri. Sta. No. 5, 1918. Elev. 770". Elevation 770.494 feet (234.847 meters)	37 57 26.80	85 56 52.40	2,891

From post No. 113 to signal No. 23.

Post No. 113 (previously described)	37 58 46.48	85 56 09.84	.....
Artillery Range Signal No. 25; iron post stamped "Art. Tri. Sta. No. 25, 1918. Elev. 725". Elevation 725.259 feet (221.059 meters).	37 58 37.54	85 56 38.16	2,449
Artillery Range Signal No. 25, 0.4 mile south of, in Y forks of road, in hub; copper nail and washer, marked "U. S. T. B. M. 698.6". Elevation 698.64 feet (212.946 meters).			
Hub (t. b. m.)	37 58 23.81	85 56 45.29	1,483
Dead sycamore tree, 100 feet northwest of, in open field on hill; hub.	37 57 56.19	85 56 33.32	2,954
Signal No. 23 (previously described)	37 57 50.38	85 56 44.60	1,078

From hub at T road northeast near schoolhouse to signal No. 14.

Primary traverse by H. S. Senseney in 1918.

Artillery Range Signal No. 14; iron post stamped "Art. Tri. Sta. No. 14, 1918. Elev. 757". Elevation 756.883 feet (230.698 meters)	37 55 13.22	85 55 37.09	1,253

From post No. 111 to signal No. 2.

Primary traverse by O. B. Walsh in 1918.

Artillery Range Signal No 2; iron post stamped "Art. Tri. Sta. No. 2, 1918. Elev. 779". Elevation 778.525 feet (237.295 meters).	37 57 07.68	85 55 56.13	2,170

From farm-road crossing on Corey road to signal No. 34.

Artillery Range Signal No. 34; iron post stamped "Art. Tri. Sta. No. 34, 1918. Elev. 759". Elevation 759.451 feet (231.481 meters)	37 57 29.76	85 55 11.69	952

From hub at T road east on Corey road to signal No. 4.

Artillery Range Signal No. 4; iron post stamped "Art. Tri. Sta. No. 4, 1918. Elev. 750". Elevation 750.714 feet (228.818 meters).	37 58 05.35	85 55 02.22	1,479

From hub at farm-road crossing on Corey road to signal No. 37.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Artillery Range Signal No. 37; iron post stamped "Art. Tri. Sta. No. 37, 1918. Elev. 767". Elevation 767.001 feet (233.782 meters)	37 57 34.42	85 55 47.18	1,932
From post No. 113 to signal No. 27.			
Artillery Range Signal No. 27; iron post stamped "Art. Tri. Sta. No. 27, 1918. Elev. 745". Elevation 745.214 feet (227.142 meters)	37 58 57.75	85 56 02.25	1,292
From post No. 104 to signal No. 6.			
Artillery Range Signal No. 6; iron post stamped "Art. Tri. Sta. No. 6, 1918. Elev. 780". Elevation 779.837 feet (237.695 meters).	37 56 31.86	85 56 50.28	1,141
From hub on north side of road, at top of hill, at road south through gate to signal No. 7.			
Artillery Range Signal No. 7; iron post stamped "Art. Tri. Sta. No. 7, 1918. Elev. 760". Elevation 760.130 feet (231.688 meters).	37 56 34.34	85 55 47.55	1,379
From post No. 152 to signal No. 11.			
Artillery Range Signal No. 11; iron post stamped "Art. Tri. Sta. No. 11, 1918. Elev. 772". Elevation 772.218 feet (235.373 meters)	37 56 03.14	85 56 07.40	381
From post No. 106 to signal No. 12.			
Artillery Range Signal No. 12: iron post stamped "Art. Tri. Sta. No. 12, 1918. Elev. 772". Elevation 772.131 feet (235.346 meters).	37 55 37.75	85 56 11.52	3,133
From Cupio southeast along highways to Highland Ridge road near Mount Olive School.			
Primary leveling by E. E. Harris in 1918.			
Cupio, 0.45 mile east of, on north side of Tiddings road, in forks of lane to farmhouse, in root on south side of 20-inch beech tree: copper nail and washer, marked "U. S. T. B. M. 432.8." Elevation 432.80 feet (131.918 meters).			
Cupio, 0.98 mile southeast of, on top of ridge, in southwest corner of road forks, on top of sandstone outcrop: chiseled square, marked "U. S. T. B. M. 735.1". Elevation 735.11 feet (224.062 meters).			
Cupio, 1.71 miles southeast of, on east side of Tiddings road and on south side of farm road to northeast, in 2 by 2-inch hub: copper nail and washer, marked "U. S. T. B. M. 779.6". Elevation 779.52 feet (237.598 meters).			
From point 0.3 mile northwest of Bartles School west to Bartles station.			
Primary leveling by R. B. Steele in 1918.			
Bartles School, 0.56 mile northwest of, on north edge of road to Bartles station, in line with T road south, on top of high ridge, in top of 2 by 2-inch stake; copper nail and washer; gate 30 feet south is marked "U. S. T. B. M. 497.1". Elevation 497.16 feet (151.535 meters).			

KENTUCKY AND TENNESSEE.

TRIANGULATION STATIONS.

Barbourville, Baxter, Corbin, Hyden, Log Mountain, Middlesboro, and Pineville quadrangles.

BELL, HARLAN, KNOX, LESLIE, AND WHITLEY COUNTIES, KENTUCKY, LEE COUNTY, VIRGINIA, AND CLAIBORNE COUNTY, TENNESSEE.

During the season of 1916 E. L. McNair extended triangulation over six 15-minute quadrangles. Fifteen stations were occupied. Nine new stations were established, and five old stations were connected with and reestablished.

The work was started from United States Coast and Geodetic Survey stations McLean in Tennessee, and White Rock, on the Virginia-Kentucky line. All new stations established are in Kentucky, which State cooperated in the work.

Positions are on North American datum.

BAD, LESLIE COUNTY, KY.

About 7 miles south by 3 miles east of Hyden between the basins of Middle Fork of Kentucky River and Coon Creek, at the head of Rockhouse Branch of Upper Bad Creek, at the head of Lower Bad Creek and Munsey Branch of Coon Creek. Knob is heavily timbered, and lines of sight have been cut to other stations. It may be reached from Jerry Bledsoe's on Coon Creek or by following up Upper or Lower Bad Creek.

Station mark: A sandstone boulder set 18 inches in ground, in top of which is a drill hole 3 inches deep.

[Latitude 37° 03′ 21.7″. Longitude 83° 19′ 05.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Stinnett	92 21 09	272 16 02	4.10061	7.834
Thousand Stick	147 04 52	327 01 50	4.16315	9.047
Harlan	359 57 31	179 57 31	4.24293	10.871

BARNEY, KNOX AND LAUREL COUNTIES, KY.

About 11 miles northwest of Barbourville, at the head of Knox Fork of Richland Creek. A very prominent knob which, if some more timber were cut, would give an excellent view in every direction. Land belongs to Floyd Blanton. West and north sides are not cleared.

Station mark: A hole drilled 2.5 inches deep in sandstone boulder embedded about 18 inches in the ground. The mark is 12 feet south of fence corner and just west of three bearing trees to land corner.

[Latitude 36° 59′ 17.61″. Longitude 83° 56′ 52.55″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
King	40 05 29.84	220 00 16.09	4.3030481	12.485
Paint Gap	277 00 44.88	97 12 58.66	4.4830727	18.898
Hooker	334 52 25.30	154 55 59.39	4.3183122	12.932

CAMP, HARLAN COUNTY, KY.

About 2.5 miles south of Wallins Creek station, on west side of Wallins Creek, and at head of Camp, Forrester, and Sang creeks. From Wallins Creek follow power line of Kentucky Utilities Co. to top of ridge, then follow ridge to top of mountain. Knob is well cleared except a narrow strip along the ridge westward.

Station mark: A drill hole 2.5 inches deep in solid ledge of rock.

Reference marks: (1) A drill hole 2.5 inches deep in shale rock with arrow pointing to station mark; distant 9.3 feet, true azimuth 289° 24′; (2) white-oak signal tree 2 feet in diameter, distant 12.65 feet; true azimuth, 341° 47′.

[Latitude 36° 46′ 58.21″. Longitude 83° 25′ 19.88″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
White Rock	11 18 08.41	191 17 05.51	4.124,939	8.282
Tejay	66 03 56.88	246 00 11.16	4.0101507	6.361
Paint Gap	138 51 06.43	318 44 22.91	4.4029135	15.713
Harlan	215 55 37.75	35 59 22.84	4.1997811	9.843
Grays Knob	267 18 26.12	87 23 08.87	4.0689409	7.283

GRAYS KNOB, HARLAN COUNTY, KY.

On Little Black Mountain, 5 miles by road southeast of Harlan. Follow public road up Martins Fork to mouth of Grays Branch. Station is at head of Grays Branch, about 2 miles south of Martins Fork. Knob is sharp and well cleared.

Station mark: Dead stub of old signal tree.

[Latitude 36° 47′ 15.81″ (Mc); 36° 47′ 16.2″ (K). Longitude 83° 17′ 27.70″ (Mc); 83° 17′ 26.4″ (K).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
White Rock (K)	46 29 55	226 24 10	4.295623	.....
Long Spur (K)	232 44 14	52 53 11	4.444875	.....
Harlan (K)	168 57 46	348 56 48	4.097454	.....
Paint Gap (K)	123 12 27	303 01 00	4.529809	.....
White Rock (Mc)	46 30 39.25	226 24 53.99	4.2958581	12.280
Camp (Mc)	87 23 08.86	267 18 26.12	4.0689409	7.283
Harlan (Mc)	168 57 37.79	348 56 39.77	4.0973134	7.774

NOTE.—(K)=positions by F. J. Knight in 1885; (Mc)=positions by E. L. McNair in 1916.

BEARWALLOW, BELL COUNTY, KY.

About 3.5 miles southwest of Pineville, on Pine Mountain, and just west of Bearwallow Gap.

Station mark: A drill hole 2.5 inches deep in boulder set in ground, flush with surface.

[Latitude 36° 44′ 38.1″. Longitude 83° 44′ 54.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hooker	132 39 56	312 36 19	4.08639	7.581
Tejay	269 28 05	89 36 02	4.29608	12.287
White Rock	.....	108 20 38	4.44623	17.361

HARLAN, HARLAN COUNTY, KY.

On Pine Mountain about 4 miles north of Harlan. Station may be reached from Gatun flag station on Louisville & Nashville R. R., from which a road leads across Pine Mountain. Road is very rough and suitable only for saddle horses. Station is a short half mile west of gap where road crosses the mountain. Old station mark has disappeared, but new position is about the same as the old.

Station mark: A jelly glass inverted, set 1 foot below surface of ground.

Reference mark: A drill hole 2.5 inches deep in shale ledge of rock, which projects slightly above ground: distant 7.65 feet, true azimuth 241° 35′.

Latitude 36° 53′ 53.76″ (Hawkins); 36° 53′ 54.17″ (McNair). Longitude 83° 19′ 04.88″ (Hawkins); 83° 19′ 04.47″ (McNair).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Camp	35 59 22.843	215 55 37.75	4.1997811	9.843
Paint Gap	103 32 17.94	283 21 48.34	4.4260012	16.571
Stinnett	145 00 30	324 55 23	4.34218	13.662
Thousand Stick	165 04 05	345 01 00	4.48793	19.111
Thousand Stick [a]	165 03 38.73	345 00 25.18	4.4879384	19.111
Bad	179 57 31.00	359 57 31.00	4.2429300	10.871
Brashear [a]	214 01 51.14	34 08 06.57	4.4397113	17.103
Long Spur [a]	259 23 36.48	79 33 32.52	4.3976120	15.523
Gray's Knob	348 56 39.77	168 57 37.80	4.0973134	7.774

NOTE.—From Table Rock and Ivy, W. Va., stations of U. S. C. & G. S.

[a] From Bull. 496, p. 116.

HOOKER, KNOX COUNTY, KY.

About 3.5 miles southeast of Barbourville and 1 mile southwest of Artemus, on prominent knob plainly visible from both places. Just south of Cumberland River. Hill is well cleared, one lone chestnut-oak tree standing.

Station mark: A drill hole 3 inches deep in sandstone boulder set flush with surface of ground.

Reference marks: (1) Lone chestnut-oak tree, 24 inches in diameter, distant 8.7 feet; true azimuth 8° 22′; (2) drill hole 3 inches deep in large sandstone boulder, distant 20.2 feet; true azimuth 279° 26′; (3) drill hole 3 inches deep in sandstone boulder, distant 36.3 feet; true azimuth 238° 21′.

[Latitude 36° 49′ 06.20″. Longitude 83° 50′ 55.99″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
King	99 06 55.16	278 58 08.27	4.3434507	13.703
Barney	154 55 59.39	334 52 25.29	4.3183122	12.932
Paint Gap	234 44 09.55	54 52 47.88	4.4177485	16.259
Tejay	285 39 01.53	105 50 35.48	4.4750755	18.553
White Rock	295 29 26.01	115 43 42.00	4.5951420	24.462
Occident	298 24 56.5	118 30 11.1	4.17078	9.207
Bearwallow	312 36 19	132 39 56	4.08639	7.581
Log	358 00 18.31	178 00 34.36	4.2820630	11.896

KING, WHITLEY COUNTY, KY.

About 7 miles south of Corbin and 2 miles east of Brummet station on Louisville & Nashville R. R. On east end of highest ridge in neighborhood. From Brummet station, go to James Brown's place at head of creek and up through his fields to top of ridge, which follow south and east to station. View is good to north, east, and southeast but is cut off on west.

Station mark: A large boulder set in ground with drill hole and cross lines north-south and east-west and letters U. S. G. S. cut in each quadrant.

Reference marks: (1) Hickory tree 14 inches in diameter, distant 39 feet; true azimuth 165° 00′; (2) black-oak tree 10 inches in diameter, distant 16.5 feet; true azimuth 269° 51′; (3) a stone set in ground with small drill hole and arrow pointing to station, distant 6 feet; true azimuth 82° 13′.

[Latitude 36° 50′ 58.63″. Longitude 83° 05′ 34.86″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Barney	220 00 16.096	40 05 29.844	4.3030481	12.485
Paint Gap	254 47 08.845	75 04 35.082	4.6500615	27.760
Hooker	278 58 08.278	99 06 55.158	4.3434507	13.703
Log	315 05 30.214	135 14 32.089	4.5033509	19.802
McLean	340 47 07.811	160 52 58.087	4.6471732	27.575

LOG, BELL COUNTY, KY.

Situated 1.5 miles south of Chenoa (end of branch of Louisville & Nashville R. R.) and 0.8 mile south of Harrison post office at Log Mountain Coal Co.'s mines, on a spur of Log Mountain. Station is on a flat-topped ridge and lines of sight were cut to other stations. View is good to the north, but station is not worth further development. The sight to White Rock can not be made from the station but can be made from a point about 185 feet south of station.

Station mark: A drill hole about 3 inches deep in oblong sandstone boulder firmly embedded. It is on north edge of ridge close to trail leading down to gap, which is about 500 feet northeast of station. A telephone line crosses the mountain about 1,000 feet east of station.

Reference marks: Two drill holes about 1 inch deep, with chiseled arrows pointing toward station: No. 1 distant 16.2 feet; true azimuth 171° 53′; No. 2 distant 9.25 feet; true azimuth 214° 18′.

[Latitude 36° 38′ 45.48″. Longitude 83° 50′ 29.16″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McLean	22 21 14.118	202 18 04.074	4.3198364	12.977
King	135 14 32.089	315 05 30.214	4.5033509	19.802
Hooker	178 00 34.360	358 00 18.314	4.2820630	11.896
Tejay	248 28 38.001	68 39 54.527	4.4798865	18.760
White Rock	266 24 31.940	86 38 30.185	4.5432972	21.709

OCCIDENT, BELL COUNTY, KY.

On top of Pine Mountain, just south of Pineville and about 0. 8 mile from Continental Hotel. Summit well cleared.

Station mark: A drill hole 2.5 inches deep in solid rock.

[Latitude 36° 45′ 17.1″. Longitude 83° 42′ 10.6″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hooker	118 30 11	298 24 56	4.17078	9.207
Tejay	273 44 29	93 50 48	4.19735	9.788
White Rock	293 48 53	113 57 54	4.39062	15.275

PAINT GAP, KNOX AND CLAY COUNTIES, KY.

About 18 miles north of Pineville, at the head of Stinking Creek and Goose Creek, 0.25 mile west of gap where road crosses from one creek to the other. A well-cleared knob and good view in every direction except east and northeast.

Station mark: A hole 3 inches deep in sandstone boulder. Subsurface mark: A thirty-penny spike driven in soft sandstone about 15 inches below the surface.

[Latitude 36° 57′ 15.41″. Longitude 83° 36′ 32.44″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hooker	54 52 47.88	234 44 09.55	4.4177485	16.259
King	75 04 35.08	254 47 08.84	4.6500615	27.760
Barney	97 12 58.66	277 00 44.87	4.4830727	18.898
Stinnett	228 21 25	48 26 49	4.24979	11.044
Harlan	283 21 48.33	103 32 17.94	4.4260012	16.571
Camp	318 44 22.91	138 51 06.43	4.4029135	15.713
Tejay	342 27 18.54	162 30 15.71	4.3858122	15.106

STINNETT, LESLIE COUNTY, KY.

About 7 miles south and 5 miles west of Hyden, at the head of Stinnett Creek and Woodson Branch of Bowen Creek, and about 0.25 mile northwest of gap where road crosses divide. Land is owned by Thomas Collins, who lives near the head of Stinnett Creek. Hill partly timbered. Good view in north and east, but view west is largely shut off. Some cutting would open a good view to southwest.

Station mark: A sandstone boulder about 18 inches long, set in ground flush with surface. In top is a drill hole about 2.5 inches deep. Mark is about 8 feet west of a rail fence and about 35 feet east of a fence corner.

Reference mark: A dead tree, distant 24 feet; true azimuth 307°46′.

[Latitude 37° 03′ 38.2″. Longitude 83° 27′ 34.8″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Paint Gap	48 26 49	228 21 25	4.24979	11.044
Bad	272 16 02	92 21 09	4.10061	7.834
Harlan	324 55 23	145 00 30	4.34218	13.662

TEJAY, BELL COUNTY, KY.

On a high knob about 2 miles southeast of Tejay station on Louisville & Nashville R. R. (Harlan Branch) and in plain view from the station. Timber is mostly cleared from the summit. Knob is locally known as Jackson's Knob.

Station mark: A drill hole 2.5 inches deep in large flat stone on surface of ground.

[Latitude 36° 44′ 43.32″. Longitude 83° 31′ 37.02″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Log	68 39 54.52	248 28 38.00	4.4798865	18.760
Bearwallow	89 36 02	269 28 05	4.29608	12.287
Occident	93 50 48	273 44 29	4.19735	9.788
Hooker	105 50 35.48	285 39 01.52	4.4750755	18.553
Paint Gap	162 30 15.71	342 27 18.54	4.3858122	15.106
Camp	246 00 11.15	66 03 56.88	4.0101507	6.361
White Rock	322 50 19.29	142 23 01.84	4.0484631	6.947

THOUSAND STICK, LESLIE COUNTY, KY.

About 1.5 miles northwest of Hyden, on knob having good view from north to east and south, but is not as high as some surrounding knobs on the west. Old mark destroyed.

Station mark: An inverted bottle placed about 6 inches below the surface at approximate location of old station.

Reference marks: (1) Signal tree, distant 16.7 feet; true azimuth 223° 00′; (2) drill hole in sandstone boulder, distant 23.5 feet; true azimuth 257°; (3) drill hole in sandstone ledge, distant 33 feet; true azimuth 351°; (4) drill hole in sandstone ledge, distant 19.4 feet; true azimuth 64°.

[Latitude 37° 09′ 58.1″; 37° 09′ 57.65″.[a] Longitude 83° 24′ 25.7″; 83° 24′ 26.25″.[a]]

To station.	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lost[b]	229 35 09.11	49 43 14.70	4.4141161	16.124
Brashear[b]	286 26 09.43	106 35 40.03	4.3861985	15.120
Long Spur[b]	307 39 37.39	127 52 48.92	4.6134433	25.515
Harlan[b]	345 00 25.18	165 03 38.73	4.4879384	19.111
Bad	327 01 50	147 04 52	4.16315	9.047
Harlan	345 01 00	165 04 05	4.48793	19.111

[a] From Table Rock and Ivy stations, W. Va., U. S. C. & G. S.
[b] From Bull. 496, p. 119.

WHITE ROCK, HARLAN COUNTY, KY., AND LEE COUNTY, VA.

A Coast and Geodetic Survey station on Cumberland Mountain opposite Ewing railroad station on Louisville & Nashville R. R. and about 3 miles distant by road and trail. On State line between Virginia and Kentucky. Any resident can direct best way to reach the summit. Mountain is entirely cleared, and there is a very extended view, particularly to the south. The observer may see into four States on a clear day.

Station mark: Drill hole 2 inches deep in solid rock nearly level with surface. Two chiseled grooves cut north-south and east-west intersect at center of hole, with letters U.S.C.S., one in each quadrant.

Reference marks: Three 2-inch holes drilled in solid rock, with grooves terminating in arrowheads pointing to station: (1) N. 89° 25′ W., 13 feet 11.5 inches; (2) S. 41° 06′ E., 9 feet; (3) S. 12° 21′ W., 30 feet 3 inches.

[Latitude 36° 39′ 54.17″. Longitude 83° 27′ 05.07″.]

To station.	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Minter	8 55 05	188 54 37	3.88179	4.733
Clinch	24 21 34.56	204 11 50.90	4 7749749	37.011
McLean	63 33 46.90	243 16 40.28	4.6804223	29.770
Kentucky Corner	66 57 02.40	246 48 27.60	4.3676700	14.488
Virginia Corner	70 31 19.90	250 23 18.90	4.3274100	13.206
Pinnacle	71 05 26.70	250 57 46.30	4.3068000	12.594
Log	86 38 30.18	266 24 31.94	4.5432972	21.709
Bearwallow	108 20 38	.....	4.44623	17.361
Occident	113 57 54	293 48 53	4.39062	15.275
Hooker	115 43 42	295 29 26.01	4.5951420	24.462
Tejay	142 53 01.84	322 50 19.29	4.0484631	6.947
Camp	191 17 05.51	11 18 08.41	4.1247939	8.282
Grays Knob	226 24 53.99	46 30 39.25	4.2958581	12.280
Buzzard	259 57 57.25	80 15 51.63	4.6584928	28.304
Big Knob	269 44 59.46	90 18 51.91	4.9269911	52.522
Powell	287 40 09	107 50 02	4.4133010	16.093
Short	322 14 45.15	142 24 27.19	4.6000110	24.738

POLITECHNIKA GDAŃSKA ZAKŁAD GEOLOGII

McLEAN, CLAIBORNE COUNTY, TENN.

A Coast and Geodetic Survey station on Cumberland Mountain, about 3 miles west and a little north from Speedwell and about the same distance northeast from Wells Spring. Station is on a high point of the mountain and has a precipitous bluff on the south and sloping timbered ground on the north. A rough wagon road leaves the valley road about 400 yards west of John L. Ausmus's house and leads to top of mountain at Wilson Gap. Leave wagon road there and follow ridge west 1.5 miles to station. A saddle horse may be ridden all the way to station.

Station mark: A drill hole 2 inches deep in solid rock with grooves crossing through it north, south, east and west, with letters U.S.C.S., one in each quadrant.

Reference marks: (1) drill hole with arrow pointing to station, distant 25.3 feet; true azimuth 329° 37′; (2) drill hole with arrow pointing to station, distant 37.4 feet; true azimuth 49° 20′; (3) drill hole with arrow pointing to station, distant 36.5 feet; true azimuth 195° 00′.

[Latitude 36° 28′ 18.72″. Longitude 83° 55′ 48.22″.]

To station.	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
King	160 52 58.08	340 47 07.81	4.6471732	27.575
Log	202 18 04.07	22 21 14.11	4.3198364	12.977
Pinnacle	237 49 31.3	57 58 57.9	4.446275	17.363
Kentucky Corner	240 04 35.5	60 13 07.5	4.392204	15.330
White Rock	243 16 40.28	63 33 46.90	4.6804223	29.770
Clinch	330 36 40.61	150 43 59.00	4.5762106	23.419

MAINE.

TRIANGULATION STATIONS.

Brooks and Burnham quadrangles.

KENNEBEC, PENOBSCOT, SOMERSET, AND WALDO COUNTIES.

During the season of 1916 Oscar Jones occupied three new stations and located six points by intersections for control of Brooks and Burnham quadrangles. This work is based on stations Beaver, Blanchard, Carmel, Frye, Harris, and Sanborn on North American datum.

For other positions in Maine see United States Geological Survey Bulletins 122, 181, 216, 276, 440, 496, and 644; the Twenty-first Annual Report, pt. 2; United States Coast and Geodetic Survey Special Publication 46; and records of the United States and Canada Boundary Survey.

AMES, SOMERSET COUNTY, MAINE. (Not occupied.)

The station is 5 miles north of Burnham Junction.

Signal: Flag in tree used as station mark.

Station mark: A rock-maple tree 18 inches in diameter, in field, on property of Charles Ames, who lives 400 feet southwest. Tree blazed on four sides, a spike in each blaze.

[Latitude 44° 45′ 03.57″. Longitude 69° 26′ 37.79″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Gray	269	28	57.51	89	37	33.81	4.20770	10.03
Files	309	17	39.28	129	27	20.98	4.37232	14.65
Blanchard	338	21	59.80	158	26	15.72	4.33832	13.54

BEAVER, WALDO COUNTY, MAINE.

About 7 miles southeast of Albion and 7 miles nearly north of Liberty village, on a bare hill locally known as Beaver Hill, in meadow land, about 600 feet south of a hay barn.

Signal: Lone birch tree on top of hill.

Station mark: Aluminum tablet set in solid ledge.

Reference mark: Signal tree distant 27.5 feet, azimuth 330° 01′.

[Latitude 44° 29′ 02.34″. Longitude 69° 20′ 40.86″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Clinton (J)	143	20	46.67	323	13	58.32	4.33215	13.35
Carr (H)	40	02	37.06	219	59	26.09	3.9720448	5.826
Foss Tree (H)	125	53	37	305	47	13	4.16946	9.180
Foss (2) (H)	126	09	28.30	306	03	09.49	4.1692678	9.175
Albion Church (H)	126	28	13	306	24	18	3.96330	5.710
Sanborn (H)	150	37	22.22	330	27	37.15	4.5720296	23.194
Blanchard (H)	180	57	50.73	0	57	55.76	3.9735599	5.847
Frye (H)	274	47	37.97	94	52	58.02	4.0056487	6.295
Liberty (H)	343	28	53.48	163	30	23.29	3.9992827	6.203

(J)=by Oscar Jones in 1916; (H)=by G. T. Hawkins in 1912.

BLANCHARD, WALDO COUNTY, MAINE.

In field about 300 feet northwest of Mr. Blanchard's house. It is 6 miles nearly east of Albion, 4 miles north of Freedom, and 4 miles southwest of Unity.

Signal: Of sawed lumber covered with white cloth and has flag in top.

Station mark: Aluminum tablet set in granite block 12 by 14 by 20 inches, set 20 inches in ground over a cross in solid ledge.

Reference marks: Cross on ledge in narrow lane N. 30° E., distant 61.5 feet. Apple tree due north 47 feet.

[Latitude 44° 34′ 07.13″. Longitude 69° 20′ 33.69″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Clinton (J)	121	05	21.55	300	58	27.85	4.18077	9.42
Ames (J)	158	26	15.72	338	21	59.80	4.33832	13.54
Lake (J)	171	05	07.51	351	04	19.05	3.99166	6.10
Pittsfield (J)	171	31	02.96	351	29	02.30	4.40771	15.89
Gray (J)	201	43	00.92	21	47	20.47	4.3414696	13.64
Harris (J)	235	04	31.42	55	12	42.37	4.2737359	11.67
Files (J)	242	28	52.34	62	34	17.49	4.0612261	7.16
Beaver (H)	0	57	55.76	180	57	50.73	3.9735599	5.847
Carr (H)	20	28	11.30	200	24	55.16	4.2480728	11.001
Albion Church (H)	62	24	17	242	20	17	3.93029	5.292
Foss Tree (H)	86	28	41	266	22	15	4.08452	7.549
Foss (2) (H)	86	42	17.95	266	35	53.82	4.0828019	7.519
Sanborn (H)	141	22	51.87	321	13	01.32	4.4711627	18.387

(H)=by G. T. Hawkins in 1912; (J)=by Oscar Jones in 1916.

CARMEL, PENOBSCOT COUNTY, MAINE.

In the southeast part of the town of Carmel, on the highest point of Hinckley Hill, on land owned by Austin Miller.

Station mark: Bronze tablet cemented in solid rock and marked "U. S. Geological Survey—Maine."

[Latitude 44° 46′ 31.24″. Longitude 68° 58′ 11.78″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Mount Harris	49	12	44.67	229	05	12.30	4.2719702	.....
Peaked Mountain	262	20	23.35	81	41	44.17	4.6068628	.....
Mount Saunders	294	09	01.97	114	24	24.24	4.5003686	.....
Gray	83	12	57.89	263	01	32.97	4.3333655	13.40
Ide	16	54	38.44	196	52	38.49	4.1109540	8.02

CLINTON, KENNEBEC COUNTY, MAINE. (Not occupied.)

Signal and station mark: A tall square brick smoke stack in the village of Clinton.

[Latitude 44° 38′ 20.36″. Longitude 69° 30′ 22.84″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Sanborn	160	09	12.66	340	06	16.21	4.21070	10.10
Blanchard	300	58	27.85	121	05	21.55	4.18077	9.42
Beaver	323	13	58.32	143	20	46.67	4.33215	13.35

FILES, WALDO COUNTY, MAINE.

On Files Hill, in the town of Thorndike, 6 miles east of the village of Unity, on property of Charles Wrenn, who lives 500 feet south.

Station mark: Tablet in ledge.

[Latitude 44° 36′ 59.21″. Longitude 69° 12′ 50.56″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Blanchard	62 34 17.49	242 28 52.34	4.0612261	7.16
Lake	110 31 35.36	290 25 21.48	4.09758	7.78
Sanborn	121 54 57.00	301 39 40.44	4.5283385	20.97
Ames	129 27 20.98	309 17 39.28	4.37232	14.65
Pittsfield	145 05 23.41	324 57 56.89	4.38700	15.15
Gray	172 12 05.52	352 10 59.51	4.1823517	9.46

FRYE, WALDO COUNTY, MAINE.

On high bare hill in the town of Montville.

Station mark: A bronze triangulation tablet cemented in solid rock.

Reference mark: Six iron ring bolts at foot of quadripod legs; No. 1, distant 4.2 feet, azimuth 252° 28′; No. 2, distant 8.5 feet, azimuth 266° 10′; No. 3, distant 7.8 feet, azimuth 359° 39′; No. 4, distant 5.8 feet, azimuth 75° 09′; No. 5, distant 4.1 feet, azimuth 155° 56′; No. 6, distant 4.5 feet, azimuth 178° 53′.

[Latitude 44° 28′ 34.66″. Longitude 69° 13′ 04.08″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Liberty (M)	39 50 28.03	219 46 38.03	4.0549328	.....
Harris (M)	194 39 46.94	14 42 41.97	4.3365735	.....
Patterson (M)	311 47 57.89	131 54 47.74	4.2402895	.....
Bald Rock (M)	.....	.....	4.43219	.....
Ragged (M)	349 44 44.28	169 47 31.16	4.4738346	.....
Beaver (H)	94 52 58.02	274 47 37.97	4.0056487	6.295
Gray (J)	176 41 59.31	356 41 02.89	4.4871666	19.08
Ide (J)	217 16 10.33	37 24 36.90	4.4192896	16.32
Thistle (J)	234 07 03.64	54 14 09.42	4.21854	10.28
Oak (J)	246 01 43.45	66 06 40.50	4.01052	6.37

(H)=by G. T. Hawkins in 1912; (M)=by E. L. McNair in 1904; (J)=by Oscar Jones in 1916.

GRAY, PENOBSCOT COUNTY, MAINE.

Station is on Gray Hill, a sharp bald hill in the town of Plymouth, on property of Taxter Gray, who lives about 500 yards southwest.

Station mark: Tablet in ledge.

[Latitude 44° 45′ 07.64″. Longitude 69° 14′ 24.43″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Blanchard	21 47 20.47	201 43 00.92	4.3414696	13.64
Ames	89 37 33.81	269 28 57.51	4.20770	10.03
Sanborn	95 55 34.27	275 41 22.74	4.4270144	16.61
Pittsfield	112 26 35.38	292 20 14.45	4.10932	8.00
Carmel	263 01 32.97	83 12 57.89	4.3333655	13.40
Harris	323 01 42.76	143 05 34.73	4.0820304	7.51
Files	352 10 59.51	172 12 05.51	4.1823517	9.46
Frye	356 41 02.89	176 41 59.31	4.4871666	19.08

HARRIS, PENOBSCOT COUNTY, MAINE.

A station of the Coast Survey on highest point of largest hill in town of Dixmont, 1.5 miles east of Dixmont village.

Station mark: A masonry column 10 feet high and 7 feet in diameter, with a hole in its center 2 feet in diameter.

Reference marks: Drill hole in rock, N. 2° 38′ E., distant 74 feet; drill hole in rock S. 80° 50′ E., distant 17.3 feet; drill hole in rock S. 72° 50′ W., distant 69.4 feet.

[Latitude 44° 39′ 54.87″. Longitude 69° 08′ 54.67″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ragged (M)	0 16 10.87	180 16 03.41	4.7015453	.....
Frye (M)	14 42 41.97	194 39 46.94	4.3365735	.....
Liberty (M)	23 17 52.10	203 11 06.80	4.5097166	.....
Patterson (M)	347 08 23.11	167 12 18.77	4.5241926	.....
Charleston (M)	191 51 30.15	11 57 05.28	4.7034506	.....
Carmel (M)	229 05 12.30	49 12 44.67	4.2719702	.....
Greenfield (M)	230 15 31.96	50 44 54.33	4.8516641	.....
Bangor (M)	241 11 48.28	61 27 13.31	4.5179486	.....
Eddington (M)	243 33 32.38	63 53 55.23	4.6297717	.....
Peaked Mountain (M)	251 11 30.06	71 40 23.99	4.7570784	.....
Mount Saunders (M)	270 50 43.86	91 13 37.14	4.6339557	.....
Blanchard (J)	55 12 42.37	235 04 31.42	4.2737359	11.67
Sanborn (J)	110 11 49.40	289 53 46.51	4.5569736	22.40
Gray (J)	143 05 34.73	323 01 42.76	4.0820304	7.51
Ide (J)	270 36 24.19	90 41 56.28	4.0173669	6.47
Thistle (J)	325 04 39.89	145 08 51.22	4.13972	8.57
Oak (J)	347 06 45.28	167 08 47.74	4.23741	10.73

(M)=by E. L. McNair in 1904; (J)=by Oscar Jones in 1916.

IDE, WALDO COUNTY, MAINE.

On a bald hill about 3 miles north of North Monroe post office, on property of Hiram Ide, who lives 400 yards north of station.

Station mark: Tablet in ledge.

[Latitude 44° 39′ 51.03″. Longitude 69° 01′ 02.25″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Frye	37 24 36.90	217 16 10.33	4.4192896	16.32
Harris	90 41 56.28	270 36 24.19	4.0173669	6.47
Carmel	196 52 38.49	16 54 38.44	4.1109540	8.02
Thistle	12 43 28.11	192 42 07.63	4.05989	7.13
Oak	21 29 14.19	201 25 45.00	4.25449	11.16

LAKE, WALDO COUNTY, MAINE. (Not occupied.)

Station is 3 miles northwest of Unity Village, 0.5 mile southwest of Hutchinson Corner, and 500 feet west of road.

Signal: Flag in tree.

Station mark: Tablet in northwest face of pine tree 36 inches in diameter.

[Latitude 44° 39′ 21.09″. Longitude 69° 21′ 42.69″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Sanborn	128 22 36.80	308 13 34.33	4.33493	13.44
Files	290 25 21.48	110 31 35.36	4.09758	7.78
Blanchard	351 04 19.05	171 05 07.51	3.99166	6.10

OAK, WALDO COUNTY, MAINE. (Not occupied.)

Station is on Oak Hill, 1 mile south of Lanes Corners.

Station mark: Tablet in ledge.

[Latitude 44° 30′ 49.29″. Longitude 69° 06′ 00.23″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Frye	66 06 40.50	246 01 43.45	4.01052	6.37
Harris	167 08 47.74	347 06 45.28	4.23741	10.73
Ide	201 25 45.00	21 29 14.19	4.25449	11.16

PITTSFIELD, SOMERSET COUNTY, MAINE. (Not occupied.)

Signal and station mark: Iron water tower, city waterworks at Pittsfield.

[Latitude 44° 47′ 46.36″. Longitude 69° 23′ 25.28″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gray	292 20 14.45	112 26 35.38	4.10932	8.00
Files	324 57 56.89	145 05 23.41	4.38700	15.15
Blanchard	351 29 02.30	171 31 02.96	4.40771	15.89

SANBORN, SOMERSET COUNTY, MAINE.

In town of Canaan, about 0.8 mile north of Canaan village, on bald hill on Mr. Sanborn's land, 600 feet northwest of Mr. Sanborn's house, and 300 feet west of a road which crosses the hill from Canaan to Lake George. The station is not on the highest hill but was put where it is because no trees interfere with sights. A few trees on the south edge were avoided by selecting a point on the east part of the hill and 6 or 8 feet below the top.

Signal: Tripod of sawed timber over center.

Station mark: Aluminum tablet in solid ledge.

Reference marks: Cross on ledge 2.9 feet east, cross on ledge 10.6 feet northwest, and cross on ledge 5.1 feet southwest.

[Latitude 44° 46′ 35.27″. Longitude 69° 34′ 33.66″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gray (J)	275 41 22.74	95 55 34.27	4.4270144	16.61
Harris (J)	289 53 46.51	110 11 49.40	4.5569736	22.40
Files (J)	301 39 40.44	121 54 57.00	4.5283385	20.97
Lake (J)	308 13 34.33	128 22 36.80	4.33493	13.44
Clinton (J)	340 06 16.21	160 09 12.66	4.21070	10.10
Blanchard (H)	321 13 01.32	141 22 51.87	4.4711627	18.387
Beaver (H)	330 27 37.15	150 37 22.22	4.5720296	23.194
Carr (H)	342 39 13.92	162 45 47.18	4.6186864	25.825
Foss (2) (H)	344 49 11.76	164 52 37.44	4.3919484	15.321
Foss Tree (H)	344 56 58	165 00 22	4.39262	15.345

(J)=by Oscar Jones in 1916; (H)=by G. T. Hawkins in 1912.

THISTLE, WALDO COUNTY, MAINE. (Not occupied.)

The station is on a bare hill, 1 mile south of Thistle Pond, and 3 miles south of Monroe post office.

Station mark: Tablet in ledge.

[Latitude 44° 33′ 48.29″. Longitude 69° 02′ 56.82″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Frye	54 14 09.42	234 07 03.64	4.21854	10.28
Harris	145 08 51.22	325 04 39.89	4.13972	8.57
Ide	192 42 07.63	12 43 28.11	4.05989	7.13

Mattawamkeag, Millinocket, Patten, Seboeis, and Winn quadrangles.

PENOBSCOT AND PISCATAQUIS COUNTIES.

During the season of 1916 Oscar Jones controlled the above-named quadrangles by occupying 24 new stations and locating 97 points by intersections, all based on stations Fish, Peasley, Carroll, and Woodville, North American datum.

Nearly all unoccupied secondary points are located from two sights only; positions are therefore doubtful.

BARN, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station: A flag on a lone barn on the road from Winn Ferry to North Woodville.

[Latitude 45° 30′ 13.4″. Longitude 68° 25′ 48.61″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
North Woodville	169 32 29	349 31 50	3.81636	4.07
Winn	319 23 14	139 25 43	3.84466	4.35

BERRY 1, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station on Berry Ridge, 1 mile southwest of Seboeis.

Station mark: Flag in maple tree; tree blazed on four sides and has a spike in each blaze.

[Latitude 45° 20′ 54.4″. Longitude 68° 43′ 35.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	270 54 05	91 03 23	4.23291	10.62
Gray	290 37 24	110 45 02	4.17554	9.31

BERRY 2, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station on Berry Ridge, 2 miles southwest of Seboeis.

Station mark: Flag in hemlock tree, blazed on four sides, spike in each blaze.

[Latitude 45° 20′ 26.3″. Longitude 68° 43′ 09.4″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	267 55 53	88 04 53	4.21873	10.28
Gray	288 08 13	108 15 32	4.15127	8.80

BUNKER HILL, PENOBSCOT COUNTY, MAINE.

Station is on Bunker Hill, 3 miles north of Maxfield.

Station mark: Flag in maple tree south side of road, in a large pile of boulders, 200 feet south of large barn, 300 feet east of James Swift's house.

[Latitude 45° 15′ 48.8″. Longitude 68° 45′ 15.4″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	244 33 33	64 44 03	4.32940	13.27
Gray	255 35 43	75 44 32	4.22360	10.40

BOWER, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station is 2 miles north of South Lincoln, on road from South Lincoln Ferry to Bower Bank.

Station flag is in spruce tree; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 21′ 53.1″. Longitude 68° 35′ 26.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	287 59 36	108 03 01	3.83258	4.25
Gray	334 30 34	154 32 24	3.89573	4.89

CARPENTER, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station is 2.5 miles northwest of South Lincoln.

Station mark: Flag in spruce tree, north end of old field known as Carpenter field; tree blazed on four sides and has a spike in each blaze.

[Latitude 45° 21′ 45.8″. Longitude 68° 37′ 39.2″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	252 31 35	72 37 45	4.07342	7.36
Gray	317 38 20	137 41 45	3.96872	5.73

CARROLL, PENOBSCOT COUNTY, MAINE.

On a high ridge in Carroll Township, 1 mile southwest of Carroll post office, on land owned by Fred Oliver, who lives 75 yards east of the station. Timber 30 feet high on the north end of the ridge obstructs the view from the northwest round by the north to the southeast.

Station mark: A copper bolt cemented in upper surface of embedded boulder.

[Latitude 45° 24′ 22.50″. Longitude 68° 03′ 14.84″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Almanac (G)	23 59 53.9	203 58 12.1	3.8837120	.....
Passadumkeag (G)	37 47 47.5	217 34 52.7	4.5892082	.....
Peasley (G)	58 49 26.7	238 33 41.2	4.5300442	.....
Knob (G)	75 43 22.6	255 29 35.0	4.4161767	.....
Woodville (G)	103 27 24.3	283 08 40.6	4.5467760	.....
North Woodville (G)	119 35 31.8	299 18 47.6	4.5457384	.....
Katahdin (G)	129 38 22.4	309 01 23.0	4.9394592	.....
Lawler (J)	144 05 45	323 49 34	4.69950	31.11
Dobel (J)	144 54 53	324 47 32	4.36745	14.48

(G)=by S. S. Gannett in 1900; (J)=by Oscar Jones in 1916.

CHESTER 1, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station is 4 miles northwest of Lincoln Center, on west side of road to Hall Camp, about 500 feet north of cleared field.

Station mark: Flag in poplar tree; tree blazed on four sides and has a spike in each blaze.

[Latitude 45° 26′ 45.8″. Longitude 68° 32′ 17.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	323 08 05	143 10 25	3.85388	4.44
Fish Hill	348 10 12	168 11 28	4.05622	7.07

CHESTER 2, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station is 3 miles northwest of Linclon Center, 500 feet west of road to Hall Camp, near old fence line, on south end of ridge.

Station mark: Flag in poplar tree; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 24′ 59.8″ Longitude 68° 31′ 36.5.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	305 39 40	125 41 32	3.62240	2.61
Fish Hill	349 32 19	169 33 07	3.90322	4.97

CLAY ROAD FLAG, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: Flag in tree at the junction of Clay Road with Hall Camp road; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 28′ 05.2″. Longitude 68° 32′ 59.4″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	327 27 58	147 30 49	3.98611	6.02
Fish Hill	346 31 18	166 33 05	4.14539	8.68

COBB, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

On Cobb Ridge, 2 miles southeast of Seboeis.

Station mark: Flag in hemlock tree, which is blazed on four sides and has a spike in each blaze.

[Latitude 45° 21′ 12.0″. Longitude 68° 41′ 27.3″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	273 16 45	93 24 33	4.15646	8.91
Gray	297 24 17	117 30 24	4.10238	7.86

CROOKED PINE, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.
On ridge between Penobscot and Seboeis rivers, 2.5 miles north of Howland.
Station mark: A large crooked-top pine tree.

[Latitude 45° 18′ 30.8″. Longitude 68° 40′ 29.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	252 19 57	72 27 03	4.13642	8.51
Gray	274 52 37	94 58 02	4.00019	6.22

DAVIS, PENOBSCOT COUNTY, MAINE.

On the Davis farm, 2 miles northeast of Mattawamkeag.
Station mark: Flag in large elm tree, 50 feet west of old house ruin. Tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 32′ 14.91″. Longitude 68° 19′ 03.50″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Winn	25 08 07	205 05 47	4.00036	6.20
Carroll	305 11 38	125 22 54	4.40217	15.69

DEAD PINE, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.
On ridge between Penobscot and Seboeis rivers, 3 miles north of Howland.
Station mark: A large dead pine tree.

[Latitude 45° 18′ 09.7″. Longitude 68° 40′ 30.5″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	235 43 39	55 51 50	4.25949	11.31
Gray	271 08 29	91 13 55	4.00011	6.22

DOBEL, PENOBSCOT COUNTY, MAINE.

On Dobel Hill, 2 miles northwest of Kingman.
Station mark: The western of three maple trees in field, 30 feet east of road. Barn on south side of road, 300 feet distant.

[Latitude 45° 34′ 39.8″. Longitude 68° 13′ 32.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lee	10 06 33	190 04 07	4.40519	15.80
Carrol	324 47 32	144 54 53	4.36745	14.48

DOUBLE-TOP PINE, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: A double-top pine tree on ridge between Penobscot River and Seboeis River.

[Latitude 45° 17′ 44.3″. Longitude 68° 40′ 26.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	233 35 25	53 43 33	4.26867	11.53
Fish Hill	246 43 47	66 50 52	4.15068	8.79

EAST MILLINOCKET STACK, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: The eastern of two brick stacks of the paper mill at East Millinocket.

[Latitude 45° 37′ 22.9″. Longitude 68° 34′ 31.8″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
North Woodville	303 50 36	123 56 10	4.08734	7.60
Medway	332 53 37	152 54 02	3.22655	1.05

ENFIELD ROAD, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

On a high timbered ridge, 6 miles south of Lincoln, 0.5 mile west of road from Lincoln to Enfield.

Station mark: Flag in spruce tree; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 17′ 20.1″. Longitude 68° 33′ 50.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	214 34 14	34 36 36	3.88540	4.78
Peasley	292 27 46	112 33 46	4.07670	7.42

ENFIELD CHURCH, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: Center of spire on church at Enfield.

[Latitude 45° 14′ 57.7″. Longitude 68° 33′ 57.8″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bunker Hill	96 09 24	276 01 23	4.17193	9.23
Fish Hill	202 54 25	22 56 53	4.06587	7.23

FERRY HOUSE, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: Ferry House and residence, 0.5 mile northwest of South Lincoln, west side of Penobscot River.

[Latitude 45° 20′ 24.8″. Longitude 68° 35′ 22.6″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	264 25 21	84 28 49	3.80658	3.98
Gray	323 03 19	143 05 06	3.73878	3.41

FISH HILL, PENOBSCOT COUNTY, MAINE.

On a cleared hill, 1 mile south of Lincoln village, in the town of Lincoln, overlooking the surrounding country, though the view is limited southward to about 5 miles and eastward to about 6 miles.

Station mark: A granite post 30 by 7 by 7 inches, set 28 inches in the ground, in the center of the top of which is cemented a bronze triangulation tablet.

[Latitude 45° 20′ 44.90″. Longitude 68° 30′ 29.78″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Charleston (G)	56 54 19.7	236 32 40.6	4.6789897	.....
Mattamiscontis (G)	125 55 04.5	305 46 04.2	4.3087467	.....
Katahdin (G)	152 51 44.8	332 34 12.4	4.8425063	.....
Woodville (G)	184 50 58.8	4 51 40.0	4.1724197	.....
Knob (G)	268 38 13.3	88 43 51.8	4.0140397	.....
Peasley (G)	328 32 36.2	148 36 13.3	4.1059741	.....
Passadumkeag (G)	333 34 27.2	153 40 59.7	4.4282994	.....
Gray (J)	31 41 43.3	211 40 02.5	3.76904	3.66
Gravel Pit (J)	39 51 31	219 47 56	4.01196	6.39
Bunker Hill (J)	64 44 03	244 33 33	4.32940	13,27
North Woodville (J)	191 33 35.2	11 36 16.4	4.38901	15.22
McFarlane (J)	199 48 25.0	19 49 28.9	3.76089	3.58
Mohunk Corner (J)	206 18 13	26 26 29	4.53202	21.17
Macwahoc (J)	214 02 35	34 13 45	4.56091	22.61

(G)=by S. S. Gannett in 1900; (J)=by Oscar Jones in 1916.

FLAG A 7, PENOBSCOT COUNTY, MAINE.

One mile east of Millinocket, on a low rocky knob covered with low brush.

Station mark: Flag in trimmed tree 6 inches in diameter.

[Latitude 45° 39′ 25.5″. Longitude 68° 41′ 45.4″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Shack Hill	18 17 50	198 17 25	3.38709	1.52
Ragged 2	62 24 51	242 16 24	4.23887	10.77

FLAG V, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: Flag in tree, on south end of Mattamiscontis Mountain; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 26′ 30.2″. Longitude 68° 42′ 44.3″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Woodville	256 20 15	76 29 40	4.24828	11.01
Fish Hill	303 38 16	123 46 59	4.28347	11.93

FLAG HOUSE, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

The house is in the north part of Maxfield Township, at the end of a road north from the river.

Station mark: Flag on east chimney.

[Latitude 45° 18′ 41.4″. Longitude 68° 44′ 24.2″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	258 04 00	78 13 53	4.26875	11.54
Gray	274 25 39	94 33 52	4.18009	9.41

FULLER MONUMENT, PENOBSCOT COUNTY, MAINE.

Station mark: The Fuller monument in the graveyard 1 mile southwest of Lincoln, Me.

[Latitude 45° 21′ 44.9″. Longitude 68° 31′ 06.8″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	217 41 09	37 42 39	3.65452	2.81
Fish Hill	336 29 39	156 30 05	3.30559	1.26

GRAVEL PIT, PENOBSCOT COUNTY, MAINE.

On north brink of gravel pit of the Maine Central R. R., 1 mile north of Enfield station.

Station mark: Flag in birch tree; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 16′ 29.2″. Longitude 68° 35′ 32.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bunker Hill	84 27 06	264 20 12	4.10647	7.94
Fish Hill	219 47 56	39 51 31	4.01196	6.39

GRAY 2, PENOBSCOT COUNTY, MAINE.

On Gray's hill, a cleared hill 4 miles south of Lincoln.

Station mark: Tablet in large pile of boulders on higher part of hill.

[Latitude 45° 18′ 03.0″. Longitude 68° 32′ 51.5″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	211 40 02.5	31 41 43.3	3.76904	3.66
Peasley	301 06 32.0	121 11 49.7	4.05646	7.08

HALL 1, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

One mile south of Hall Camp, 100 feet west of road.

Station mark: Flag in double pine tree; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 31′ 31.1″. Longitude 68° 33′ 49.9″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	336 31 38	156 35 04	4.19950	9.84
Fish Hill	347 40 57	167 43 20	4.31000	12.70

HALL 2, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Two miles south of Hall Camp, 150 feet east of road, 500 feet south of dam and bridge over Medunkemunk stream.

Station mark: Flag in large, partly dead pine; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 30′ 01.8″. Longitude 68° 33′ 14.8″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	334 46 08	154 49 09	4.11416	8.08
Fish Hill	348 11 37	168 13 35	4.24461	10.91

HILL NO. 1, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Four miles south of Bundista, 400 feet west of road, in fence line of field, known as Hill Number One.

Station mark: Flag in pine; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 43′ 09.7″. Longitude 68° 21′ 58.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lawler	138 09 55	318 07 06	3.88245	4.74
Silver Ridge	194 37 55	14 39 32	4.06151	7.16

HOUSE, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: House 1.5 miles west of Lincoln; center.

[Latitude 44° 22′ 59.5″. Longitude 68° 32′ 09.6″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	332 22 32	152 33 43	3.67107	3.59
Gray	5 41 06	185 40 36	3.96378	5.72

HOWLAND 1, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

North side of cleared field, 3 miles north of Howland.

Station mark: Flag in double spruce tree 24 inches in diameter, 300 feet north of barn; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 16′ 56.5″. Longitude 68° 38′ 42.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	225 23 31	45 30 25	4.25000	11.05
Gray	254 56 08	75 00 17	3.89814	4.92

HOWLAND 2, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

On a timbered ridge, 5 miles north of Howland, 1 mile west of the road.

Station mark: Flag in hemlock tree 18 inches in diameter; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 18′ 30.9″. Longitude 68° 38′ 51.1″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	233 19 44	53 26 45	4.20497	9.96
Gray	276 15 01	96 19 17	3.89668	4.90

HOWLAND WATER TOWER, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: Center of water tower of the paper mill at Howland.

[Latitude 45° 14′ 17.2″. Longitude 68° 39′ 30.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bunker Hill	110 38 18	290 34 13	3.90471	4.99
Fish Hill	224 30 39	44 37 03	4.22526	10.44

KATAHDIN, PISCATAQUIS COUNTY, MAINE. (Not occupied.)

Not checked.

The highest and best-known mountain in Maine.

Station mark: Sharp rocky summit of mountain.

[Latitude 45° 54′ 07.95″. Longitude 68° 55′ 02.03″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lawler	291 01 57	111 22 51	4.60720	25.15
Ragged 2	356 54 21	176 55 24	4.54830	21.96

LAWLER, PENOBSCOT COUNTY, MAINE.

Station is on Lawler Hill, 0.5 mile west of the house of Thomas Lawler.

Station mark: Tablet in rock ledge.

[Latitude 45° 46′ 13.71″. Longitude 68° 25′ 53.51″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mattamiscontis	32 33 30	212 21 10	4.62134	25.98
Ragged 2	60 17 01	239 57 14	4.61751	25.75

LEE, PENOBSCOT COUNTY, MAINE.

On a hill known as Mount Jefferson, 0.75 mile south of Lee.
Station mark: Tablet in rock ledge.

[Latitude 45° 21′ 09.1″. Longitude 68° 16′ 57.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
North Woodville	151 21 16	331 14 18	4.42330	16.47
Carrol	251 28 17	71 38 03	4.27582	11.73

LINCOLN PAPER MILL STACK, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.
Station mark: Tall brick stack of the paper mill at Lincoln, Maine.

[Latitude 45° 22′ 07.1″. Longitude 68° 30′ 36.1″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	215 56 08	35 57 16	3.55210	2.22
Fish Hill	356 52 42	176 52 47	3.40529	1.58

McFARLANE, PENOBSCOT COUNTY, MAINE.

On a cleared hill 1 mile northeast of Lincoln Center.
Station mark: Tablet in boulder.

[Latitude 45° 23′ 40.6″. Longitude 68° 28′ 59.9″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	19 49 28.9	199 48 25.0	3.76089	3.58
Peasley	343 55 22.7	163 57 56.0	4.22990	10.55

MACWAHOC, PENOBSCOT COUNTY, MAINE.

Two miles east of Macwahoc, on land of C. A. Shannon, who lives 200 yards south of the station.
Station mark: A double maple tree at southeast corner of grove; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 37′ 00.4″. Longitude 68° 14′ 49.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	34 13 45	214 02 35	4.56091	22.61
North Woodville	68 28 58	248 20 28	4.22115	10.34

MATTAMISCONTIS, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

A well-known prominent mountain 10 miles (air line) northwest of Lincoln.

Station mark: A tall spruce tree blazed on four sides and having a spike in each blaze; tree is used as a lookout by fire warden.

[Latitude 45° 27′ 10.83″. Longitude 68° 43′ 09.13″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ragged 2	137 14 20	317 06 54	4.30000	12.40
North Woodville	240 27 30	60 39 13	4.39042	15.26

MEDWAY, PENOBSCOT COUNTY, MAINE.

On a cleared hill 2 miles southwest of Medway, 100 yards west of house of Freman Powers.

Station mark: One-inch hole drilled in granite boulder at end of lane.

[Latitude 45° 36′ 34.3″. Longitude 68° 33′ 56.3″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
North Woodville	299 30 02	119 35 10	4.03285	6.70
Medway Pine	317 47 40	137 49 39	3.73363	3.36

MEDWAY CHURCH, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: Center of spire of church at Medway.

[Latitude 45° 36′ 20.9″. Longitude 68° 31′ 41.1″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Medway	98 03 59	278 02 22	3.47119	1.84
North Woodville	307 12 17	127 15 17	3.90871	5.04

MEDWAY PINE, PENOBSCOT COUNTY, MAINE.

Three miles south of Medway, south end of a cleared field, at end of road known as the Medway turnpike.

Station mark: Flag in tree; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 34′ 24.4″. Longitude 68° 31′ 08.6″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
North Woodville	282 46 19	102 49 28	3.77044	3.66
Fish Hill	358 05 20	178 05 48	4.40333	15.73

MILLINOCKET STACK, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.
Station mark: Brick stack of paper mill at Millinocket.

[Latitude 45° 38′ 52.5″. Longitude 68° 42′ 20.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ragged 2	64 20 37	244 12 36	4.20935	10.06
Shock Hill	359 56 58	179 56 58	3.11328	8.07

MILLINOCKET TREE, PENOBSCOT COUNTY, MAINE.

Station mark: A small lone spruce tree on a cleared hillside about 1,500 feet southeast of the paper mill at Millinocket.

[Latitude 45° 38′ 35.8″. Longitude 68° 42′ 24.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
A 7	208 38 02	28 38 30	3.24170	1.08
Shock Hill	354 50 12	174 50 15	2.89604	.49

MOLUNKUS CORNER, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.
In a spruce tree about 700 yards southwest of Molunkus Corners.
Station mark: Flag in tree; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 37′ 12.8″. Longitude 68° 18′ 53.5″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	26 26 29	206 18 13	4.53202	21.17
North Woodville	57 28 52	237 23 16	4.08238	7.51

MOUNT CHASE, PENOBSCOT COUNTY, MAINE. (Not occupied.)

N t checked.
A well-known mountain in the northern part of Penobscot County.
Station mark: Fire-lookout tower on the summit of mountain.

[Latitude 46° 06′ 32.00″. Longitude 68° 28′ 42.28″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	1 34 52	181 33 35	4.92862	52.72
Ragged 2	28 04 05	208 46 15	4.82324	41.35

NEW BARN, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.
New barn on the north side of the road from Lincoln Center to Chester.

[Latitude 45° 24′ 34.6″. Longitude 68° 30′ 54.9″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	303 39 25	123 40 47	3.47775	1.87
Fish Hill	355 35 11	175 35 29	3.85195	4.42

NORTH WOODVILLE, PENOBSCOT COUNTY, MAINE.

On a cultivated ridge in the northern part of Woodville Plantation.

Station mark: A tablet in the center of a large pile of granite boulders.

[Latitude 45° 33′ 42.06″. Longitude 68° 26′ 43.48″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	11 36 16.4	191 33 35.2	4.38901	15.22
Woodville	21 44 33.4	201 42 33.2	3.99447	6.14
Mattamiscontis	60 39 13.0	240 27 30.0	4.39042	15.27
Ragged (2)	94 20 45.4	274 01 35.3	4.54426	22.26
Macwahoc	248 20 28.0	68 28 58.0	4.22115	10.34
Carroll	299 18 46.0	119 35 31.0	4.54571	21.83
Lee	331 14 18.0	151 21 16.0	4.42330	16.47
Winn	333 57 02.0	154 00 11.0	4.11657	8.13

PEASLEY, PENOBSCOT COUNTY, MAINE.

On the highest point of bare, grass-covered hill in the town of Burlington, east of Esculassis Pond.

Station mark: A bronze triangulation tablet cemented in solid granite, level with the surface of the ground.

[Latitude 45° 14′ 52.10″. Longitude 68° 25′ 24.35″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Greenfield (G)	7 09 42.6	187 08 23.0	4.2943006	
Lowell (G)	130 08 37.8	310 06 15.9	3.7554309	
Fish Hill (G)	148 36 13.3	328 32 36.2	4.1059741	
Woodville (G)	168 11 27.1	348 08 31.0	4.4194598	
North Woodville (G)	177 11 03.0	357 10 06.6	4.5431412	
Knob (G)	198 16 53.6	18 18 53.7	4.0689899	
Carroll (G)	238 33 41.2	58 49 26.7	4.5300442	
Almanac (G)	247 33 17.5	67 47 20.8	4.4463959	
Passadumkeag (G)	338 10 24.8	158 13 15.5	4.1502341	
Gray (J)	121 11 49.7	301 06 32.0	4.05646	7.08
McFarlane (Grif) (J)	163 57 56.0	343 55 22.7	4.22990	10.55

(G)= Work by S. S. Gannett in 1900; (J)= Work by Oscar Jones in 1916.

POND, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

On a high ridge known as the Pinnacle, in Cold Stream Pond.

Station mark: Pine tree blazed on four sides; spike in each blaze. Flag in tree.

[Latitude 45° 16′ 53.6″. Longitude 68° 32′ 24.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gray	164 43 52	344 43 52	3.34608	1.38
Fish Hill	199 18 01	19 19 22	3.87885	4.70

PORCUPINE, PENOBSCOT COUNTY, MAINE.

In north portion of Chester plantation, north end of last field on the Hall Camp road.

Station mark: Large pile of boulders 200 yards north of abandoned house, east side of road.

[Latitude 45° 26′ 28.5″. Longitude 68° 31′ 55.3″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Woodville	216 28 52	36 30 34	3.71931	3.26
McFarlane	323 38 35	143 40 40	3.80855	4.00

RAGGED 2, PENOBSCOT COUNTY, MAINE.

On Ragged Mountain, 5 miles northwest of West Seboeis, 4 miles west of Engle siding on the Bangor & Aroostook Railroad. The mountain is a fire-control lookout, and cabin of lookout is 100 yards south of the station. A good trail from Engle siding to mountain. Follow telephone line.

Station mark: A tablet in rock ledge.

Signal: Spruce tree, distant 43.5 feet, azimuth 00° 00′.

[Latitude 45° 35′ 04.86″. Longitude 68° 53′ 34.03″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Katahdin	111 22 51	291 01 57	4.60720	25.15
Lawler	239 57 14	60 17 01	4.61751	25.75
Shock Hill	248 29 24	68 37 25	4.19519	9.74
North Woodville	274 01 35.3	94 20 45.4	4.54426	21.80
Fish Hill	311 18 06.4	131 34 33.2	4.60330	24.93

SCHOOL, PENOBSCOT COUNTY, MAINE.

Station is a schoolhouse on the north side of the river, on the north side of the road from Mattawamkeag to Medway.

[Latitude 45° 34′ 46.8″. Longitude 68° 25′ 12.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
North Woodville	44 36 03	224 34 58	3.44794	1.74
Medway Pine	84 54 43	264 50 29	3.88914	4.93

SEBOEIS, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

One-half mile east of South Branch Pond, 2 miles northeast of Seboeis.

Station mark: Flag in pine tree; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 24′ 03.4″. Longitude 68° 39′ 55.5″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	272 45 43	92 53 30	4.15462	8.87
Gray	320 16 56	140 21 58	4.16014	8.99

SCHOOL, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: Schoolhouse, Chester Township.

[Latitude 45° 25′ 24.6″. Longitude 68° 31′ 31.5″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	314 13 11	134 14 59	3.66280	2.86
Fish Hill	351 09 01	171 09 45	3.94141	5.43

SCHOOLHOUSE, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Six miles southwest of Lincoln, on road from South Lincoln to Enfield.

[Latitude 45° 18′ 18.1″. Longitude 68° 35′ 17.6″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	219 30 21	39 34 50	4.11101	8.02
Gray	278 20 01	98 21 45	3.50755	2.00

SHOCK HILL, PENOBSCOT COUNTY, MAINE.

On Shock Hill, 1 mile south of Millinocket, 0.5 mile east of road.

Station mark: Tablet in granite boulder.

[Latitude 45° 38′ 10.45″. Longitude 68° 42′ 20.72″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mattamiscontis	2 57 24	182 56 50	4.30945	12.67
Ragged 2	68 37 25	248 29 24	4.19519	9.74

SILVER RIDGE, PENOBSCOT COUNTY, MAINE.

Station is 4 miles south of Sherman Mill, on Silver Ridge, 300 yards west of road, 100 feet northwest of apple orchard.

Station mark: Tablet in stone post 12 by 8 by 36 inches.

[Latitude 45° 49′ 10.7″. Longitude 68° 19′ 43.2″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lawler	55 41 22	235 36 56	3.98618	6.02
Katahdin	101 33 47	281 08 27	4.66856	28.94

SOUTH LINCOLN FLAG, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: Flag in pine tree, 1 mile east of South Lincoln, 500 feet west of road. Hill cleared; tree blazed on four sides and has a spike in each blaze.

[Latitude 45° 20′ 15.8″. Longitude 68° 34′ 08.8″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	259 18 43	79 21 19	3.68604	3.02
Gray	337 39 17	157 40 12	3.64684	2.76

SOUTH LINCOLN WATER TANK, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

Station mark: Center of high wooden water tank of the spool mill at South Lincoln.

[Latitude 45° 19′ 50.8″. Longitude 68° 35′ 40.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	230 46 45	50 51 30	4.05044	6.98
Gray	312 11 05	132 13 05	3.69506	3.08

STONE, PENOBSCOT COUNTY, MAINE.

On the north end of a cleared ridge, 3 miles northeast of Lincoln Center, 500 yards north of Mr. Stone's residence.

Station mark: Flag in spruce tree 3 feet north of fence line and 150 feet west of fence corner; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 25′ 39.0″. Longitude 68° 26′ 41.4″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	28 42 27	208 39 45	4.01489	6.43
North Woodville	179 49 45	359 49 46	4.17358	9.27

WEBB, PENOBSCOT COUNTY, MAINE.

On Webb Hill, 0.5 mile north of Mattawamkeag.

Station mark: Flag in pine tree on west side of road: tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 31′ 44.2″. Longitude 68° 20′ 53.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	31 41 22	211 34 31	4.37849	14.85
North Woodville	115 36 33	295 32 23	3.92583	5.24

WHITNEY 1, PENOBSCOT COUNTY, MAINE.

On the south end of Whitney Ridge, 0.5 mile north of Seboeis.

Station mark: Cross cut in east face of cliff; timber 50 feet northeast.

[Latitude 45° 22′ 35.00″. Longitude 68° 42′ 42.5″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	263 27 27	83 37 12	4.25548	11.19
Gray	303 04 15	123 11 15	4.18656	9.55

WHITNEY 2, PENOBSCOT COUNTY, MAINE.

On the north end of Whitney Ridge, 1 mile north of Seboeis, 300 feet west of end of road. Hill cleared.

Station mark: A pine tree 6 inches in diameter, blazed on four sides, and having a spike in each blaze.

[Latitude 45° 22′ 50.5″. Longitude 68° 43′ 03.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Flag B	146 11 37	326 10 43	3.47418	1.85
McFarlane	265 05 20	85 15 20	4.26493	11.43
Gray	303 37 40	123 44 55	4.20415	9.95
Bunker Hill	12 29 07	192 27 23	4.12491	8.29

WIDOW, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

On the farm of the Widow Reed, 8 miles north of Lincoln Center.

Station mark: Flag in spruce tree, north end of field, 200 feet northwest of house; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 28′ 46.5″. Longitude 68° 30′ 29.3″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McFarlane	347 06 55	167 08 06	3.98614	6.02
Fish Hill	359 12 20	179 12 27	4.17228	9.23

WINN, PENOBSCOT COUNTY, MAINE.

On the north end of a cleared ridge, 2 miles southeast of Winn.

Station mark: Flag in tree; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 27′ 21.38″. Longitude 68° 22′ 19.15″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
North Woodville	154 00 11	333 57 02	4.11657	8.13
Carroll	282 24 10	102 37 45	4.40619	15.83

WOODVILLE, PENOBSCOT COUNTY, MAINE.

On a cleared ridge in the southeast corner of Woodville Plantation, on land owned by Jerry Glidden, who lives on the southeast side of ridge; station is on east side of a big pile of rocks on bare ledge. View is obstructed by timber on the northeast end of ridge.

Station mark: A granite post, 18 by 11 by 11 inches, set 12 inches in the ground, on solid ledge; in the center of top of post is cemented a bronze triangulation tablet.

[Latitude 45° 28′ 44.96″. Longitude 68° 29′ 31.88″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill (G)	4 51 40.0	184 50 58.8	4.1724197	.....
Charleston (G)	45 16 07.4	224 53 45.6	4.7641319	.....
Mattamiscontis (G)	80 48 44.4	260 39 00.8	4.2547967	.....
Katahdin (G)	144 59 59.6	324 41 48.5	4.7597900	.....
North Woodville (G)	201 42 33.2	21 44 32.7	3.9944700	.....
Carroll (G)	283 08 40.6	103 27 24.3	4.5467760	.....
Almanac (G)	295 41 01.6	115 58 03.0	4.5396474	.....
Knob (G)	328 07 26.0	148 12 22.3	4.2346552	.....
Passadumkeag (G)	344 38 29.2	164 44 17.8	4.6049016	.....
Peasley (G)	348 08 31.0	168 11 27.1	4.4194598	.....
Lowell (G)	357 17 34.3	177 18 08.3	4.3437360	.....
Porcupine (J)	36 30 34	216 28 52	3.71931	3.26

(G)=by S. S. Gannett in 1900; (J)=by Oscar Jones in 1916.

WOODARD, PENOBSCOT COUNTY, MAINE. (Not occupied.)

Not checked.

About 400 feet south of Woodard, a station of the Canadian Pacific Railway.

Station mark: Flag in a large double pine tree; tree is blazed on four sides and has a spike in each blaze.

[Latitude 45° 24′ 25.9″. Longitude 68° 34′ 52.6″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fish Hill	320 00 31	140 03 38	3.94945	5.53
Gray	347 25 07	167 26 33	4.08325	7.53

NEW HAMPSHIRE.

TRIANGULATION STATIONS.

Alton, Mount Pawtuckaway, Gilmanton, and Suncook quadrangles.

BELKNAP, MERRIMACK, ROCKINGHAM, AND STRAFFORD COUNTIES.

In the spring of 1917 George T. Hawkins extended triangulation over the above-named quadrangles from stations Rattlesnake, Pawtuckaway, and Catamount of the United States Coast and Geodetic Survey.

Ten new stations were occupied and 3 points were located by intersections, all on North American datum.

BALD, ROCKINGHAM COUNTY, N. H.

In the town of New Market, on low bald hill, 2.5 miles southwest from New Market and 4 miles northeast of Epping.

Station mark: A chiseled cross, with letters "U. S." cut in top of large boulder in place in old fence.

Reference mark and signal: A 4-foot red-oak tree 7.5 feet north of mark; true azimuth, 212° 24′ 30″.

[Latitude 43° 03′ 20.68″ Longitude 71° 00′ 27.92″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rattle	78 54 29.85	258 45 56.70	4.2392230	10.779
Lookout	110 01 21.42	289 54 14.15	4.1777198	9.356
Pawtuckaway	115 00 42.23	294 52 55.39	4.2316737	10.593
Green	189 02 26.25	9 03 56.17	4.2761511	11.735

BLUE JOB, STRAFFORD COUNTY, N. H.

A State fire watch tower on highest part of hill used as signal and station mark. Instrument under center of tower and 11.1 feet from the center of each of 4 concrete piers which support the tower.

NOTE.—United States Coast and Geodetic Survey station bolt and triangle (not found) is given as latitude 43° 19′ 53.733″; longitude 71° 06′ 59.802″.

[Latitude 43° 19′ 53.53″. Longitude 71° 06′ 59.81″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pawtuckaway	15 41 59.06	195 38 39.41	4.3865691	15.133
Catamount	66 53 19.73	246 45 56.73	4.1996366	9.840
Pine tree	105 20 01.68	285 12 11.05	4.2042714	9.945
Gunstock	135 22 37.77	315 12 11.17	4.4645724	18.110
Prospect	143 08 51.17	323 05 49.82	3.9960174	6.157
Breezy	203 41 57.36	23 44 42.75	4.1293997	8.371
Green	315 23 54.95	135 29 53.74	4.2258825	10.453

BREEZY, STRAFFORD COUNTY, N. H.

In the town of Milton, about 5 miles northeast of Farmington, on a low hill 250 feet east of north and south road and 250 feet south of old house. Mountain has some brush and a few trees on top.

Station mark: A tablet in solid granite.

Signal: A small pine tree with white target distant 25 feet; true azimuth 318° 45′.

Latitude 43° 26′ 33.15″. Longitude 71° 02′ 59.03″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Blue Job	23 44 42.75	203 41 57.36	4.1293997	8.371
Prospect	68 50 30.21	248 44 43.17	4.0857204	7.570
Gunstock	108 02 31.17	287 49 18.25	4.4348716	16.913

CATAMOUNT, MERRIMACK COUNTY, N. H.

A station of the United States Coast and Geodetic Survey in Pittsfield. Go from Pittsfield village to home of William T. Batchelder, on the southeast side of Catamount Mountain, thence the way is direct and plain to the top, which is a somewhat long, bare ridge. The station is on the highest part and is marked by a bolt and triangle. No angles were taken, as trees would have had to be cut down.

Recovered in 1885 and 1917.

Signal: A tripod of poles with white target and small spruce tree in top, distant 11.4 feet; true azimuth, 312° 32′.

[Latitude 43° 16′ 31.60″. Longitude 71° 17′ 45.71″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fort	10 53 04.36	190 52 05.44	4.0123292	6.392
Hookset	35 40 28.69	215 33 17.43	4.3880496	15.184
Garvin	60 53 06.83	240 47 42.54	4.0873154	7.597
Rattlesnake	77 00 03.63	256 48 42.00	4.2624685	14.316
Gunstock	167 30 57.96	347 27 55.45	4.4409050	17.150
Prospect	211 14 30.34	31 18 52.38	4.2191971	10.293
Blue Job	246 45 56.73	66 53 19.73	4.1996366	9.840
Green	282 11 57.20	102 25 18.36	4.4313442	16.776
Pawtuckaway	335 02 24.23	155 06 26.82	4.2784249	11.797

FORT, MERRIMACK COUNTY, N. H.

In the town of Epsom, about 3 miles nearly southeast from Short Falls, a station on the Boston & Maine R. R., on a high, bald hill that has timber on its south side. It is the middle and highest one of a group of hills.

Station mark: An iron bolt in solid granite with triangle cut around bolt.

Signal: A spruce tree braced with poles and having a flag in top; distant 13 feet; true azimuth, 135° 55′.

[Latitude 43° 11′ 04.22″. Longitude 71° 19′ 11.74″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hall	15 42 42.99	195 41 15.80	4.0273369	6.617
Hookset	51 36 15.64	231 30 03.57	4.1959371	9.756
Rattlesnake	103 28 36.64	283 18 14.48	4.3240408	13.104
Garvin	115 24 18.65	295 19 53.53	3.9857047	6.012
Catamount	190 52 05.44	10 53 04.36	4.0123292	6.393
Pawtuckaway	305 31 07.66	125 36 08.88	4.0875151	7.601
Rattle	334 30 03.08	154 34 17.27	4.2914416	12.156

GARVIN, MERRIMACK COUNTY, N. H.

In the town of Chichester, about 4 miles north of Short Falls, a station on the Boston & Maine R. R., and 8 miles east of Concord. On a cleared hill.

Station and signal: Flagpole over center of lookout tower on hotel.

[Latitude 43° 13′ 18.55″. Longitude 71° 25′ 39.01″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hookset	14 18 33.53	194 16 46.23	4.1569435	8.919
Gunstock	188 04 04.26	8 06 26.86	4.5215643	20.650
Pine Tree	210 44 52.88	30 49 50.23	4.2809247	11.865
Prospect	223 41 24.31	43 51 10.89	4.4449216	17.309
Catamount	240 47 42.54	60 53 06.83	4.0873154	7.597
Fort	295 19 53.53	115 24 18.65	3.9857047	6.012
Hall	337 47 55.88	157 50 53.53	4.1916793	9.661

GREEN, STRAFFORD COUNTY, N. H.

In the town of Barrington, about 6 miles northwest from Dover, on the highest part of a bald hill known locally as Green Hill, and about 0.25 mile north of Mr. Houston's house.

Station mark: A tablet in large boulder in place.

Signal: A tripod of poles with white target over center.

Latitude 43° 13′ 25.07″. Longitude 70° 58′ 16.42″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bald	9 03 56.17	189 02 26.25	4.2761511	11.735
Pawtuckaway	58 10 09.19	238 00 51.65	4.3361173	13.473
Catamount	102 25 18.36	282 11 57.20	4.4313442	16.776
Blue Job	135 29 53.74	315 23 54.95	4.2258825	10.453

GUNSTOCK, BELKNAP COUNTY, N. H. (Not occupied.)

A well-known mountain immediately south of Lake Winnepesaukee and 5 miles east of Laconia.

Station mark: Center of fire tower.

(Not identical with United States Coast and Geodetic Survey station.)

NOTE.—Gunstock United States Coast and Geodetic Survey copper bolt (not found) is given as latitude 43° 31′ 04.319″, longitude 71° 22′ 11.378″.

[Latitude 43° 31′ 04.70″. Longitude 71° 22′ 11.35″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Garvin	8 06 26.86	188 04 04.26	4.5215643	20.650
Rattlesnake	27 06 27.97	206 58 07.23	4.5576361	22.438
Breezy	287 49 18.25	108 02 31.17	4.4348716	16.913
Prospect	311 14 16.75	131 21 42.10	4.2872237	12.039
Blue Job	315 12 11.17	135 22 37.77	4.4645724	18.110
Catamount	347 27 55.45	167 30 57.96	4.4409050	17.150

HALL, MERRIMACK COUNTY, N. H.

In the town of Hookset, about 10 miles northeast of Manchester, on well-known hill named Hall Mountain. The highest part has been cleared of timber and has second growth of birch and poplar on top. Some of this small timber was cut so that other points could be seen. Large trees that come in line toward Hookset and Rattlesnake were not cut, and lines to these stations can be sighted only in the reverse direction.

Station mark: A tablet in solid granite.

Signal: A tall dead snag 75 feet east of center; true azimuth, 278° 02′.

[Latitude 43° 05′ 31.99″. Longitude 71° 21′ 19.25″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hookset	93 00 45.19	272 56 00.58	3.9747452	5.863
Garvin	157 50 53.53	337 47 55.88	4.1916793	9.661
Fort	195 41 15.80	15 42 42.99	4.0273369	6.617
Pawtuckaway	256 12 46.64	76 19 14.74	4.1212260	8.214
Lookout	265 32 34.16	85 39 37.79	4.1520893	8.819
Rattle	303 12 09.10	123 17 50.12	4.1308339	8.398

HOOKSET, MERRIMACK COUNTY, N. H.

In the town of Hookset, about 0.5 mile west of Hookset station, about 10 miles north of Manchester, on sharp rocky peak known as the Pinnacle.

Station mark and signal: Center of observation tower.

Reference marks: South anchor ring bolt for guy cable to tower, 70 feet distant, and west anchor bolt, 71.3 feet distant.

[Latitude 43° 05′ 47.85″. Longitude 71° 28′ 15.87″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rattlesnake	150 40 54.91	330 36 45.49	4.2254153	10.442
Garvin	194 16 46.23	14 18 33.53	4.1569435	8.919
Catamount	215 33 17.43	35 40 28.69	4.3880496	15.184
Fort	231 30 03.57	51 36 15.64	4.1959371	9.756
Hall	272 56 00.58	93 00 45.19	3.9747452	5.863

LOOKOUT, ROCKINGHAM COUNTY, N. H. (Not occupied.)

About 3 miles south of Deerfield. Center of an observation tower for fire control.

[Latitude 43° 06′ 07.26″. Longitude 71° 10′ 53.50″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rattle	18 35 38.52	198 34 12.30	3.9526144	5.571
Hall	85 39 37.79	265 32 34.16	4.1520893	8.819
Bald	289 54 14.15	110 01 21.42	4.1777198	9.356

PAWTUCKAWAY, ROCKINGHAM COUNTY, N. H.

A station of the United States Coast and Geodetic Survey on Pawtuckaway Mountain. The mountain is in the towns of Deerfield and Nottingham. It rises about 800 feet above the level of the sea and commands a fine view of the surrounding country. The ocean is also seen from the summit. It is covered with small oak and pine timber and the summit is owned by William Chase, who resides on the south side and near the base of it. Station is on the highest point of the mountain and is

marked by a copper bolt driven firmly into the ledge. There are two routes by which this mountain is easily reached from Boston. One is by taking Portland train on "upper" railroad to Newmarket, distance from Boston 54 miles, thence by private conveyance, approaching the mountain from the east; distance from Newmarket to mountain, 16 miles. Second route from Boston, take train for Concord and stop at Manchester, distance from Boston 56 miles, thence by private conveyance to Pawtuckaway, approaching it from the southwest; distance from Manchester to station, 21 miles. The mountain is quite steep and difficult of ascent. Best route for ascending it is on the southwest side, and a road is there laid out.

Recovered 1886, 1908. O. B. French: Found iron bolt in a drill hole and various other holes in same ledge. Mountain is covered with small timber and brush. Some cutting was necessary to open lines. Ridge is about northeast and southwest; hence any lines in these directions would require much cutting. This iron bolt probably is at point where old station was located. Probably placed by a State geological survey party many years ago. Pole then used was held erect by guy wires attached to iron bolts in the rock. The following measurements were made to various drill holes and bolts: Stratham Junction, 00° 00′ 00″.

(1) One-half inch drill hole, 119° 00′, 0.51 meter.
(2) One-half inch drill hole 240° 00′, 0.445 meter.
(3) One-half inch drill hole 355° 00′, 0.60 meter.
(4) One-half inch drill hole 00° 00′, 0.605 meter.
(5) Iron bolt bent for guy 102° 40′, 1.81 meters.
(6) Iron bolt bent for guy 230° 20′, 1.93 meters.
(7) Iron bolt bent for guy 335° 40′, 3.015 meters.

Signal (Hawkins, 1917): Spruce tree 31 feet distant; true azimuth, 54° 58′.

[Latitude 43° 07′ 13.689″. Longitude 71° 11′ 51.318″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gunstock (CGS)	162 29 53.31	342 22 47.91	4.6656557	.....
Agamenticus (CGS)	254 15 15.37	74 35 59.52	4.6298055	.....
Rattle (H)	8 21 28.52	188 20 41.77	4.0278356	6.625
Hall (H)	76 19 14.74	256 12 46.64	4.1212260	8.214
Rattlesnake (CGS)[a]	111 37 06.02	291 21 42.94	4.5152114	20.350
Fort (H)	125 36 08.88	305 31 07.66	4.0875151	7.601
Catamount (H)	155 06 26.82	335 02 24.23	4.2784249	11.797
Blue Job (H)	195 38 39.41	15 41 59.06	4.3865691	15.133
Green (H)	238 00 51.65	58 10 09.19	4.3361173	13.473
Bald (H)	294 52 55.39	115 00 42.23	4.2316737	10.593

[a] Not observed.

(CGS)=work done by U. S. Coast and Geodetic Survey in 1872. (H)=work done by George T. Hawkins in 1917.

PINE TREE IN GROVE, BELKNAP COUNTY, N. H. (Not occupied.)

About 3 miles northwest of Center Barnstead. A pine tree in a grove.

[Latitude 43° 22′ 10.11″. Longitude 71° 18′ 25.40″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Prospect	248 35 42.29	68 40 31.82	4.0080547	6.330
Blue Job	285 12 11.05	105 20 01.68	4.2042714	9.945
Garvin	30 49 50.23	210 44 52.88	4.2809247	11.865

PROSPECT, BELKNAP COUNTY, N. H.

In the town of Alton, on sharp bald hill which has timber on north side, about 2 miles northeast of Half Moon Pond and 3 miles southwest of New Durham station.

Station mark: An iron bolt in granite ledge.

Signal: Spruce tree braced with poles and having flags above top, 7 feet distant; true azimuth, 92° 08′.

[Latitude 43° 24′ 10.36″. Longitude 71° 11′ 23.90″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Catamount	31 18 52.38	211 14 30.34	4.2191971	10.293
Garvin	43 51 10.89	223 41 24.31	4.4449216	17.309
Rattlesnake	58 08 25.63	237 52 41.27	4.5631873	22.727
Pine tree	68 40 31.82	248 35 42.29	4.0080547	6.330
Gunstock	131 21 42.10	311 14 16.75	4.2872237	12.039
Breezy	248 44 43.17	68 50 30.21	4.0857204	7.570
Blue Job	323 05 49.82	143 08 51.17	3.9960174	6.157

RATTLE, ROCKINGHAM COUNTY, N. H.

In the town of Raymond, about 2 miles southwest of the village of Raymond, on low bald hill known as Rattlesnake Hill. All timber is cleared off. The station is not on the highest part, because Hall Mountain could not be seen from that point.

Station mark: A tablet in large granite boulder in place and about 4 feet lower than highest part of hill.

Signals: A spruce tree braced with poles near a pile of rocks on the highest point, distant 17.5 feet; true azimuth, 260° 56′, and another 150 feet southwest of highest point, built on small bushes with white cloth stretched, distant 150.3 feet; true azimuth, 242° 46′.

[Latitude 43° 01′ 31.85″. Longitude 71° 12′ 59.77″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hall	123 17 50.12	303 12 09.10	4.1308339	8.398
Fort	154 34 17.27	334 30 03.08	4.2914416	12.156
Pawtuckaway	188 20 41.77	8 21 28.52	4.0278356	6.625
Lookout	198 34 12.30	18 35 38.52	3.9526144	5.571
Bald	258 45 56.70	78 54 29.85	4.2392230	10.779

RATTLESNAKE, MERRIMACK COUNTY, N. H.

A Coast and Geodetic Survey station, first set in 1871 on the northern part of the hill, which is not the highest part, the top at that time being covered with wood. Before 1872 the wood had been cut off, and the station was moved to the highest point. To reach the new station take the long pond road from Concord Street and turn to the right just before reaching Mr. Farnham's. This road was used by the quarry company, which owns the land leading to the top of the hill. The station is on a very large boulder at the highest point of the hill and is marked by the usual bolt and triangle.

Signal (1917): Spruce tree in top of small oak tree with white targets, distant 13 feet; true azimuth, 180° 37′.

[Latitude 43° 13′ 42.47″. Longitude 71° 34′ 20.49″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gunstock (H)	206 58 07.23	27 06 27.97	4.5566361	22.438
Prospect (H)	237 52 41.27	58 08 25.63	4.5631873	22.727
Catamount (H)	256 48 42.00	77 00 03.63	4.3624685	14.316
Fort (H)	283 18 14.48	103 28 36.64	4.3240408	13.104
Pawtuckaway (H)	291 21 42.94	111 37 06.07	4.5152114	20.350
Hookset (H)	330 36 45.49	150 40 54.91	4.2254153	10.442
Unkonoonuc (CGS)	2 48 17.21	182 47 36.97	4.4356724	----------
Stewart (CGS)	96 12 33.33	276 00 24.43	4.3828029	----------

(CGS)=work done by U. S. Coast and Geodetic Survey in 1871–2. (H)=work done by G. T. Hawkins in 1917.

NEW YORK.

PRIMARY TRAVERSE.

Andes, Delhi, Livingston Manor, Margaretville, and Walton quadrangles.

DELAWARE, SULLIVAN, AND ULSTER COUNTIES.

The geographic positions in the following list are on North American datum. They are based upon Andes triangulation station and were determined by F. J. McMaugh in 1916.

Lines were run approximately around the borders of Andes quadrangle and east-west along Delaware & Northern R. R. through the center of the quadrangle.

For other positions in New York see United States Geological Survey Bulletins 122, 181, 201, 216, 245, 276, 310, 440, 496, 551, and 644; part I of the Eighteenth, Nineteenth, Twentieth, and Twenty-first Annual Reports; Appendix EEE to Report of the Chief of Engineers, United States Army, 1902, Records of the U. S. Coast and Geodetic Survey. Triangulation by New York State Survey in 1887.

ANDES QUADRANGLE.

South along highways near east border of quadrangle. (By F. J. McMaugh in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Andes triangulation station, 1.4 miles northwest of, near Mr. Doig's house, intersection of road east with Gladstone Hollow road, 24.2 feet northeast to southwest corner of ice house, 28 feet southeast to corner of stone wall	42 13 39.4	74 45 37.4	.....
Andes post office, 2.3 miles north of, fork in roads, 15 feet west to Harley H. Shaver's mail box, 30 feet southwest to telephone pole, painted "T. P. 1906"	42 12 45.5	74 46 03.1	5,790
Andes post office, 1.5 miles north of, small stone bridge over stream; center	42 12 00.4	74 46 00.1	4,575
Andes post office, 0.75 mile north of, at north edge of village, road forks, 15 feet north to sign on tree "Delhi 12⅘ miles," 25 feet southeast to signpost marked "C. H. No. 982, Delhi 13½ miles, Margaretville 9¾ miles"	42 11 39.0	74 46 16.4	2,482
Andes post office, 0.25 mile west of, in northeast corner of east abutment of highway bridge, about 900 feet east of railroad station; bronze tablet stamped "Prim. Trav. Sta. No. 1, 1916, Elev. 1,594"	42 11 18.2	74 47 17.2	5,039
Andes, 1 mile south of, road forks, 30 feet northeast to 12-inch maple tree, 40 feet southwest to 12-inch maple tree	42 10 29.7	74 47 22.2	4,926
Andes, 1.3 miles south of, in center of grass triangle at T road east, near painted elevation "1541"	42 10 14.2	74 47 18.9	1,586
Andes, 2 miles southeast of, at farm road north, mail box of William Neal; post is painted "2036"	42 10 03.6	74 46 23.0	4,351
Andes, about 2.5 miles south of, on west side of road; center of large rock, painted "2204"	42 09 46.3	74 46 18.7	1,775
Andes, 2.6 miles south of, at top of hill, on east side of road; at southwest corner of milk stand, about 35 feet northeast of stone in wall, painted "2293"	42 09 43.6	74 46 11.4	620
Andes, 3 miles south of, at triple mail box and boulder, painted "1945", T road east	42 09 23.0	74 46 01.6	2,208
Andes, 3.7 miles south of, 0.25 mile south of Mr. Hamilton's house; south corner of small wooden bridge	42 08 47.7	74 45 44.1	3,812
Arena, 2.4 miles north of; southwest corner of schoolhouse No. 5	42 08 21.8	74 45 24.6	3,008
Arena, 2 miles north of, T road northeast	42 08 03.2	74 45 19.5	1,917
Arena, 1.1 miles northwest of, center of small stone-arch bridge over creek	42 07 18.8	74 45 00.3	4,727

ANDES QUADRANGLE—Continued.

Along Delaware & Northern R. R.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Arena, 1.5 miles west of, center of track at railroad crossing, 25 feet east to "B. M. 1234"	42	06	47.0	74	45	59.8	.....
Union Grove, 1.70 miles east of, and 0.5 mile west of Jacksonburg siding, in southwest corner of railroad bridge 12; bronze tablet stamped "Prim. Trav. Sta. No. 2, 1916 N. Y. Elev. 1,227"	42	06	34.3	74	46	28.1	2,496
Union Grove, 1 mile east of bridge 13	42	06	06.6	74	46	59.9	3,684
Union Grove, 0.18 mile southwest of railroad station, in top of and at south end of west abutment of steel bridge over East Branch; bronze tablet stamped "Prim. Trav. Sta. No. 15, 1916, Elev. 1,218 feet"	42	05	24.9	74	47	53.9	5,876
Union Grove, highway bridge over stream through village, center of road at northeast end	42	05	14.2	74	47	47.7	1,181
Union Grove, 0.9 mile southeast of, about 250 feet south of Union Grove Mill, T road east at mail box	42	04	52.9	74	46	49.8	4,873
Union Grove, 2 miles southeast of, at Charles Lynn's mail box, T road east	42	04	27.6	74	45	43.4	5,623
Union Grove, 2.9 miles southeast of, 700 feet northwest of William Reed's house, intersection of road southeast through woods	42	03	53.8	74	45	01.0	4,686
Union Grove, 3.6 miles southeast of, barway in fence at north edge of Lou Smith's farm	42	03	13.5	74	45	03.5	4,086
Lewbeach, 4 miles north of, 13.4 feet southwest of, southwest corner of Lou Smith's house, 40.35 feet southwest of southeast corner of house; nail in stake	42	03	00.6	74	45	17.8	1,697
Lewbeach, 3.2 miles north of, barway at north edge of Barnhardt's farm, wire fence uphill, rail fence downhill, 10 feet west to trespass notice	42	02	20.1	74	45	06.1	4,192
Lewbeach, 2.6 miles north of, at south edge of Barnhardt's farm, about 125 feet southwest of barn, barway in fence	42	01	53.0	74	44	59.5	2,789
Lewbeach, 2 miles north of, east end of Towse Bridge over Beaver Kill	42	01	17.2	74	45	09.3	3,698

Along highway near south border of quadrangle.

Lewbeach, 1.5 miles north of, in north end of east abutment of highway bridge over Beaver Kill on the Beach Hill Brook road; bronze tablet stamped "Prim. Trav. Sta. No. 3, 1916 N. Y."	42	01	07.0	74	45	44.6	2,858
Lewbeach, 0.8 mile northeast of, near Arthur Jones's house, at corner of stone wall and wire fence, large maple tree said to be on Sullivan-Ulster county line	42	00	46.3	74	46	19.1	3,339
Lewbeach, 40 feet east of east end of bridge, crossroads	42	00	18.7	74	47	06.6	4,548

North along highways and railroad near west border of quadrangle.

Downsville, north rail at road crossing, just northeast of railroad station	42	04	19.6	74	59	24.7	.....
Downsville, in northeast abutment of first (and smaller) highway bridge north from railroad station toward village; bronze tablet stamped "N. Y. 1103, Prim. Trav. Sta. No. 8, 1916"	42	04	30.2	74	59	22.8	1,083
Downsville post office, 200 feet southeast of, southeast end of highway bridge	42	04	49.9	74	59	42.6	2,490
Downsville, 1.1 miles northeast of, 125 feet southwest of road forks, center of small wooden bridge	42	05	40.0	74	59	05.9	5,778
Downsville, 2 miles northeast of, just north of white house on hillside, south of unpainted house and large barn, center of bridge over Telford Brook	42	06	27.0	74	59	14.0	4,791
Downsville, 2.2 miles north of, opposite door of schoolhouse 13, center of road	42	06	36.4	74	59	22.1	1,129
Downsville, 3.4 miles north of, 140 feet south of road fork, center of small stone-arch bridge	42	07	38.2	74	59	40.3	6,409
Hamden station, opposite north end of, center of track	42	11	25.1	74	59	46.0	.....
Hamden station, 0.5 mile northeast of, 200 feet west of covered bridge, railroad crossing	42	11	44.9	74	59	23.3	2,642
Delancey station, 240 feet south of, in east side of concrete culvert; bronze tablet stamped "Prim. Trav. Sta. No. 9, 1916. Elev. 1285"	42	12	34.2	74	58	41.3	5,903
Delancey station, 1.2 miles northeast of, road crossing	42	13	31.1	74	58	00.6	6,528
Frasers station, 0.75 mile south of, opposite milepost "N. Y. 192"; top of east rail	42	13	58.2	74	57	59.7	2,746
Frasers station, 650 feet south of, in southwest abutment of railroad bridge 21, over Platner Brook; bronze tablet stamped "Prim. Trav. Sta. No. 10, 1916, N. Y. Elev. 1323"	42	14	36.0	74	57	49.5	3,899

ANDES QUADRANGLE—Continued.

East along highways near north border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Sherwood Bridge, 1.6 miles southeast of, fork in roads	42	14	56.4	74	54	39.3	.....
Sherwood Bridge, 2.2 miles southeast of, at T road south, 12 feet north of five mail boxes, 6 feet east of culvert, on turn post	42	14	33.4	74	54	07.5	3,342
Sherwood Bridge, 2.75 miles southeast of, near H. S. Covert's house, fork in road	42	14	40.4	74	53	32.9	2,703
Sherwood Bridge, 3.1 miles southeast of, 40 feet from milk stand, at second-class road south	42	14	46.8	74	53	11.7	1,718
Sherwood Bridge, 3.8 miles southeast of, 40 feet southwest of barway opposite sugar house, 0.25 mile east of the Buckley place, 6 feet north of center of road; nail in hub	42	14	21.3	74	52	02.0	5,851
Bovina Center, 4.5 miles southwest of, fork in roads, signboard reads, "This highway discontinued by order of superintendent of highways"	42	14	01.0	74	51	37.9	2,739
Bovina Center, 3.9 miles southwest of, in clearing, 400 feet north of sheep barn, culvert	42	13	58.3	74	50	57.9	3,021
Bovina Center, 2.9 miles southwest of, 98 feet southeast of road fork, 50 feet south of road, in cleared field belonging to Louisa M. Gerry, in boulder; bronze tablet stamped "Prim. Trav. Sta. No. 11, 1916 N. Y."	42	14	15.2	74	50	05.6	4,293
Bovina Center, 2.6 miles southwest of, at road into Gerry estate; gate post painted "1886"	42	14	17.2	74	49	44.0	1,635
Bovina Center, 2.2 miles southwest of, T road south	42	14	32.7	74	49	25.0	2,124
Bovina Center, 1.6 miles southwest of, sign post reads "Delhi 7½ miles, Andes 5 miles, Bovina Center 2½ miles," "C. H. No. 951" intersection of crossroads	42	14	40.5	74	48	44.6	3,137
Bovina Center, 1.5 miles southwest of, intersection of road northeast with State road	42	14	27.4	74	47	53.8	4,047
Bovina Center, about 1.5 miles south of, 100 feet north of Coulter schoolhouse, at road forks, 8 feet east of t. b. m. on large boulder; elev. 1773	42	14	38.4	74	47	42.7	1,392
Bovina Center, about 1.5 miles southeast of, at west end of grass triangle at T road north, 5 feet south of I. P. Hafeles's mail box	42	14	21.2	74	46	46.6	4,566
Tunis Lake, northwest of, second-class crossroads	42	14	18.8	74	46	37.0	769

East along Delaware & Northern R. R. through center of quadrangle.

Downsville, 1.20 miles east of, opposite switchstand, center of track	42	04	20.5	74	58	03.4	.....
Downsville, 3.3 miles east of, in top of south wall of culvert, 4 feet west of east end, stamped "Prim. Trav. Sta. No. 12, 1916. N. Y. Elev. 1,123"	42	04	50.1	74	55	40.2	11,210
Pepacton, 0.6 mile west of, east wall of culvert 22	42	04	34.3	74	54	10.0	6,995
Pepacton, 200 feet west of, in northeast corner of bridge 17; bronze tablet stamped "Prim. Trav. Sta. No. 13, 1916 N. Y. Elev. 1,146"	42	04	45.2	74	53	29.6	3,245
Pepacton, 0.9 mile east of, west end of double span bridge 20	42	04	58.0	74	52	28.2	4,812
Pepacton, 2.1 miles east of, east abutment of bridge 19	42	04	50.2	74	51	07.9	6,116
Shavertown, public-road crossing, 0.5 mile southwest of, west rail at	42	05	25.1	74	50	41.3	4,073
Shavertown station, road crossing at	42	05	41.0	74	50	15.4	2,532
Shavertown station, 0.3 mile east of, in southeast corner of railroad bridge over Tremper Kill; bronze tablet stamped "Prim. Trav. Sta. No. 14, 1916 N. Y. Elev. 1,187"	42	05	43.3	74	49	55.5	1,523
Shavertown station, 0.9 mile east of, opposite west end of stone culvert, south rail	42	05	21.7	74	49	23.1	3,282
Andes Junction, switchstand at	42	05	16.4	74	48	19.3	4,847

Magnetic declination for north border of quadrangle, 10° 46′ W.; for south border of quadrangle, 10° 14′ W.; for east border of quadrangle, 10° 36′ W.; for west border of quadrangle, 10° 45′ W.

DELHI QUADRANGLE.

East along highways and New York, Ontario & Western Ry. in south part of quadrangle. (By F. J. McMaugh in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Frasers station, 0.6 mile northeast of, railroad crossing	42	15	05.0	74	57	39.6	.....
Frasers station, 1.1 miles northeast of, 300 feet north of bridge 22, road crossing	42	15	28.2	74	57	19.6	2,791
Frasers station, 1.3 miles northeast of, center of bridge 23, over highway	42	15	27.3	74	57	02.6	1,283
Frasers station, 2 miles northeast of, road crossing, south rail at	42	15	26.8	74	56	12.4	3,775
Frasers station, 2.3 miles northeast of, at road crossing, center of track	42	15	35.5	74	55	59.8	1,297
Sherwood Bridge, 210 feet north of north end of, T road south	42	15	38.8	74	55	45.8	1,107
Sherwood Bridge, 0.5 mile southeast of, near poor farm, T road southeast	42	15	14.7	74	55	51.1	2,472
Sherwood Bridge, 1.2 miles southeast of, near three mail boxes and milk stand, fork in roads	42	15	00.7	74	55	06.2	3,662

LIVINGSTON MANOR QUADRANGLE.

West along highways near north border of quadrangle.

Lewbeach, 0.5 mile southwest of, fork in roads, farm road south uphill	41	59	54.2	74	47	26.2	.....
Lewbeach, 1.2 miles southwest of, 100 feet northeast of small red barn near two white houses, center of small wooden bridge over stream	41	59	29.4	74	47	55.6	3,350
Lewbeach, 1.8 miles southwest of, road north across small wooden bridge to sawmill	41	59	18.1	74	48	35.4	3,212
Lewbeach, 2.4 miles southwest of, road forks	41	59	05.7	74	49	12.4	3,058
Lewbeach, 2.8 miles southwest of, at road forks, south side of grass triangle	41	58	47.5	74	49	32.3	2,385
Lewbeach, 3.3 miles southwest of, about 300 feet south of Beaver Kill post office, in grass triangle at fork in roads, center of large flagstone	41	58	48.6	74	50	05.3	2,492
Beaver Kill post office, 0.5 mile southwest of, road forks	41	58	36.0	74	50	22.9	2,304
Beaver Kill post office, 0.9 mile southwest of, near yellow cottage and young pine grove, fork in roads	41	58	41.6	74	50	48.4	2,254
Beaver Kill post office, 2 miles southwest of, 200 feet north of Leonard Butler's house, center of grass triangle in road forks	41	58	07.0	74	51	45.5	5,551
Beaver Kill post office, 2.4 miles southwest of, 700 feet south of Craigie Clair schoolhouse, in northwest abutment of highway bridge over Beaver Kill; bronze tablet stamped "Prim. Trav. Sta. No. 4, 1916 N. Y. Elev. 1,415"	41	57	49.2	74	52	00.1	2,114
Rockland, 1.5 miles northeast of, 60 feet west of intersection of Beaver Kill and Spring Brook roads, center of bridge over Spring Brook	41	58	04.7	74	53	55.5	8,861
Rockland, 1 mile north of, in top and at east end of middle pier of highway bridge over Beaver Kill; bronze tablet stamped "Prim. Trav. Sta. No. 5, 1916 N. Y. Elev. 1,332"	41	57	55.1	74	54	29.1	2,711
Rockland, 1.9 miles northwest of, north side of road, about opposite Mr. Campbell's barn and 12 feet from barway to pasture; nail in stake	41	58	37.4	74	54	46.4	4,477
Rockland, 2.7 miles northwest of, Branch District School 14, front door of	41	59	05.8	74	55	25.3	4,111
Rockland, 3.7 miles northwest of, center of grass triangle at fork in roads north and west, near three mail boxes, marked "Cable," "Lindsey," "Cole"	41	59	49.5	74	56	01.2	5,178
Rockland, 4.3 miles northwest of, center of bridge over Russell Brook	41	59	37.0	74	56	38.3	3,072
Rockland, 5.2 miles northwest of, 160 feet northwest to barn, 60 feet south to lone ash tree, small house northeast of road, center of road opposite gateway	41	59	58.6	74	57	32.7	4,647
Gregorytown, 4.5 miles southeast of, fork in roads near John Elfrey's house, 100 feet north to southeast corner of house, 60 feet northwest to corner of shed, 30 feet southwest to apple tree	41	59	46.0	74	58	37.8	5,082
Gregorytown, 4.2 miles southeast of, on Staedel farm, 55 feet from northeast corner of house, 50 feet east of barn door, 25 feet north of corner of shed, 16 feet west of road, in ledge; bronze tablet stamped "Prim. Trav. Sta. No. 6, 1916 N. Y."	41	59	54.8	74	58	59.6	1,865

Magnetic declination for north border of quadrangle, 10° 14′ W.

MARGARETVILLE QUADRANGLE.

Near northwest corner of quadrangle. (By F. J. McMaugh in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Andes triangulation station, a prominent timbered mountain locally known as Pisgah Mountain, in the town of Andes, and owned by Elliott Graham; most of the timber was cut down in 1900, one birch tree being left for signal. Station mark: A bronze triangulation tablet cemented in a large flat boulder on highest point of mountain. Reference mark: The birch signal tree; true azimuth, mark to tree, 110° 04′; distance, 57 feet	42 13 16.81	74 44 11.38	.....
Andes triangulation station, 0.5 mile northwest of, 110 feet northeast of William E. Oliver's house, 60 feet northwest of tree at corner of fence, 25 feet east of corner of milk house, 12 feet south of corner of barn; nail in ground	42 13 34.81	74 44 53.79	.....
Along highways near west border of quadrangle.			
Arena, 0.75 mile northwest of, south end of steel highway bridge over the "East Branch"	42 07 00.6	74 44 42.3	.....
Arena, 0.4 mile west of railroad station, west end of steel bridge No. 9	42 06 49.0	74 44 45.1	1,195

Magnetic declination for west border of quadrangle, 10° 36′ W.

WALTON QUADRANGLE.

North along highways and railroad near east border of quadrangle.

Gregorytown, 3 miles southeast of, about 100 feet northeast of, fork in roads, 28 feet southeast of maple tree, 50 feet southwest of iron water tank, in center of grass triangle, large rock	42 00 14.8	75 00 05.8	.....
Gregorytown, 2.4 miles southeast of, fork in roads north and northwest, at edge of grass	42 00 54.1	75 00 07.6	3,975
Gregorytown, 1.6 miles southeast of, 150 feet north of barway near large unpainted barn, 120 feet south of barway at drive leading to small dilapidated house, fork in roads	42 01 08.0	75 00 58.3	4,082
Gregorytown, 0.9 mile southeast of, 84 feet south of schoolhouse No. 4, 50 feet northwest of wooden bridge, fork in roads	42 01 38.9	75 01 19.3	3,500
Gregorytown, 500 feet northeast of railroad crossing, at north side of grass triangle, 8 feet southeast of intersection of road southwest, T road southeast	42 01 52.8	75 02 11.6	4,190
Gregorytown, road crossing Delaware & Northern R. R. at flag station	42 01 49.8	75 02 16.6	480
Gregorytown, 1.3 miles north of, 470 feet northeast of railroad crossing at Corbett, in southwest abutment of bridge 27; bronze tablet stamped "Prim. Trav. Sta. No. 7, 1916 N. Y. Elev. 1105"	42 02 43.1	75 01 20.6	6,856
Colchester station, west rail of Delaware & Northern R. R.	42 03 32.0	75 00 29.8	6,260
Colchester station, 0.7 mile north of, farm road crossing railroad	42 04 04.3	75 00 05.0	3,766
Hawley station, 2.3 miles southeast of, N. 76° 30′ W., distant 15 feet to hinge on gatepost at road leading downhill, right-angle bend in road	42 09 09.2	75 00 28.1	.....
Hawley station, 1.5 miles southeast of, 40 feet west of road fork, stone-arch bridge over stream	42 09 50.5	75 00 19.0	4,239
Hawley station, 0.6 mile southeast of, iron signpost at T road southeast; sign reads "Downsville 8 miles, Walton 7 miles"	42 10 13.2	75 01 11.6	4,582
Hawley station, 0.2 mile south of, south end of covered highway bridge	42 10 31.4	75 01 02.9	1,950
Hawley station, road crossing New York, Ontario & Western Ry.	42 10 42.8	75 01 01.8	1,162

Magnetic declination for east border of quadrangle, 10° 45′ W.

Childwold, Cranberry Lake, Long Lake, Nicholville, Santa Clara, St. Regis, Stark, and Tupper Lake quadrangles.

HAMILTON, HERKIMER, AND ST. LAWRENCE COUNTIES.

The following geographic positions are based on points previously established by primary traverse and triangulation in adjoining quadrangles.

Many stations on the shores of Cranberry Lake were determined by secondary triangulation based on primary traverse points near the north and south ends of the lake. Angles were repeated 10 times with the transit.

The work was done in 1916 by C. B. Kendall.

CHILDWOLD QUADRANGLE.

North along railroad and highways in southwest part of quadrangle. (By C. B. Kendall in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Shurtleff station, 150 feet west of, at old road crossing	44	15	07.5	74	44	43.6	
Shurtleff, center of dam across Grasse River	44	15	18.8	74	44	42.6	1,141
Shurtleff, 0.2 mile north of station, 300 feet southwest of Mr. Shurtleff's residence, 583 feet northwest of center of dam across Grasse River, 40 feet south of wagon road, in rock ledge; bronze tablet stamped "Prim. Trav. Sta. No. 6, 1916 N. Y." Elevation, 1,556 feet	44	15	23.4	74	44	47.3	583
Concrete culvert painted "1621 P. T."	44	16	27.9	74	44	28.2	6,678
Concrete culvert at old log road crossing painted "1578 P. T."	44	16	32.2	74	44	19.7	751
Culvert over small stream, painted "1524"	44	17	05.0	74	44	01.4	3,580
Culvert over small stream	44	17	26.7	74	43	41.1	2,650
Sevey's, 600 feet southwest of Sevey's Hotel, 50 feet southwest of junction of the Potsdam-Tupper Lake road with road to Cranberry Lake, in south end of concrete headwall to small culvert; bronze tablet stamped "Prim. Trav. Sta. No. 8, 1916 N. Y." Elevation, 1,532 feet	44	17	47.0	74	43	03.2	3,442
Sevey's, 1 mile southeast of, at north edge of road, on large boulder; painted square "t. b. m. 1,582.8"	44	17	27.2	74	42	11.0	4,294
Jacks Pond outlet bridge, 2,200 feet northwest of, on north edge of road, 20 feet west of T road north; stone on which is painted a square and t. b. m. 1,617.6	44	17	20.8	74	40	54.5	5,602
Jacks Pond outlet, center of bridge over	44	17	06.8	74	40	31.4	2,198
Moosehead Mountain, Colvin station No. 299, a standard plug stamped "N. Y. State Survey, V. Colvin, Supt., No. 299"	44	17	59.54	74	41	09.78	6,027
Moosehead triangulation station, situated on cleared mountain in Jamestown Township, on south side of Raquette River, about 1.5 miles northeast of Sevey post office. A signal of N. Y. State land survey is on same mountain, about 300 feet distant. Station mark: A bronze triangulation tablet cemented in solid rock	44	18	02.19	74	41	09.67	268
Moosehead Mountain, fire warden's lookout tower	44	18	00.37	74	44	09.94	185
Childwold post office, 150 feet southeast of, inside of wire fence on south edge of road, in large boulder; bronze tablet stamped "Prim. Trav. Sta. No. 15, 1916." Elevation, 1,628 feet, stone is painted erroneously "1,527.9"	44	17	10.7	74	39	48.6	7,769

East along highways near south border of quadrangle.

Moosehead triangulation station, on cleared mountain in Jamestown Township, on south side of Raquette River, about 1.5 miles northeast of Sevey post office. Signal of N. Y. State Land Survey is on same mountain about 300 feet distant. Station mark: A bronze triangulation tablet cemented in solid rock	44	18	02.19	74	41	09.67	
Childwold post office, 150 feet southeast of, inside of fence on south side of road, in large boulder; bronze tablet stamped "Prim. Trav. Sta. No. 15, 1916 N. Y. Elev. 1,628 feet"	44	17	10.6	74	39	48.6	7,875
Childwold post office, 1.2 miles southeast of, in yard of house on north side of road, pine tree	44	17	15.8	74	38	24.0	6,175
Second-class road fork east, on west side of road opposite, telephone pole	44	16	24.1	74	37	46.4	5,903
Gale Hotel and post office, 700 feet north of, at private T road west to Massawepie Lake, sign post in center of triangle	44	16	03.2	74	37	54.4	2,190
Gale Hotel and post office, 300 feet northwest of, 50 feet east of a laundry building, 25 feet northwest of southeast end of stone bridge and 75 feet west of public road; bronze tablet stamped "Prim. Trav. Sta. No. 16, 1916 N. Y."	44	15	59.3	74	37	51.8	442
Gale, 1.3 miles east of, second-class road fork southeast to Idlehour camp, 25 feet east of large dead birch tree and 20 feet north of small birch, painted P. T.	44	16	12.0	74	36	18.2	6,933
Second-class road fork east, 25 feet south to pine tree with fire sign and 12 feet west to beech tree, painted P. T.	44	15	43.0	74	35	49.0	3,630

CHILDWOLD QUADRANGLE—Continued.

North along New York Central R. R., Ottawa division, between Tupper Lake Junction and Kildare.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Milepost T 4—O 124, 650 feet north of, 40 feet west of center of track, in boulder; bronze tablet stamped "Prim. Trav. Sta. No. 17, 1916 N. Y."	44	15	37.0	74	30	16.2	
Milepost T 5—O 123, center of track opposite	44	16	20.4	74	30	33.4	4,563
Pitchfork station, switch point at north end of siding, center of track	44	16	47.8	74	30	21.5	2,912
Milepost T 6—O 122, center of track opposite	44	17	10.3	74	30	15.2	2,320
Milepost T 7—O 121, center of track opposite	44	17	53.8	74	30	32.8	4,594
Milepost T 8—O 120, center of track opposite	44	18	33.3	74	31	18.0	5,176
Old Kildare station, abandoned siding at, telephone pole, marked "N. Y. C. L.—W. U. T.—8—20"	44	18	59.4	74	31	34.3	2,892
Kildare station, 400 feet northeast of, about 15 feet south of center of New York Central R. R. track, in top of boulder; bronze tablet stamped "Prim. Trav. Sta. No. 17, 1916 N. Y."	44	19	38.8	74	31	46.6	4,090

Checked spur line northeast along New York Central R. R. from Kildare.

Milepost T 10—O 118, center of track opposite	44	20	06.2	74	31	25.1	3,186
Milepost T 11—O 117, center of track opposite	44	20	36.4	74	30	35.1	4,750

From Kildare northwest along highways via Kildare Club and Hollywood post office to Panther triangulation station.

Prim. Trav. Sta. No. 17 (described above)	44	19	38.8	74	31	46.6	
Franklin-St. Lawrence county line, 1.1 miles west of Kildare station, center of Kildare road	44	19	58.4	74	33	01.3	5,783
Willis Brook, center of plank bridge over	44	20	05.3	74	33	27.5	2,031
Telephone pole with sign, "4 miles to Kildare Club," center of road opposite	44	20	16.1	74	34	09.5	3,246
Telephone pole with sign, "3 miles to Kildare Club," center of road opposite	44	20	52.9	74	34	58.0	5,134
Small stream, center of plank bridge over	44	21	16.6	74	36	00.0	5,098
Stream, center of plank bridge over	44	21	34.7	74	36	23.7	2,517
Kildare Club house, 1 mile south of, center of triangle at three corners, road west to Barclay Club house	44	21	46.3	74	36	45.8	1,987
Kildare Club, 55 feet northeast of the northeast corner of guide house at, 175 feet southeast of the south wing of main building, 75 feet west of the northwest corner of barn, in solid rock flush with ground; bronze tablet stamped "Prim. Trav. Sta. No. 19, 1916 N. Y."	44	22	39.5	74	36	15.3	5,829
Little Jordan Lake, outlet of, center of plank bridge over	44	22	56.7	74	36	43.4	2,679
Trail south to Amber Lake, center of road at, 20 feet east to birch tree with sign, "Amber Lake"	44	23	10.9	74	36	53.2	1,611
Sawmill, about 2 miles west of Kildare Club house, smokestack of	44	22	35.8	74	37	54.9	5,721
Hole 8 by 8 by 4 feet near top of small hill, north edge of road	44	22	45.1	74	38	53.2	4,346
Bear Brook, center of old bridge over	44	22	43.3	74	39	13.7	1,496
Stone bridge, 25 feet west of road, highest point, painted "U. S. P. T."	44	22	28.0	74	40	40.4	6,490
Pole bridge over small stream, center of	44	22	32.7	74	40	54.9	1,155
Forks of trail south to Gate's Dam, birch stump on south edge of road at, painted "U. S. P. T."	44	23	02.0	74	42	16.5	6,627
Hollywood Inn and post office, 60 feet east of front entrance, in solid rock; bronze tablet stamped "Prim. Trav. Sta. No. 20, 1916 N. Y. Elev. 1,335"	44	23	07.7	74	43	46.2	6,542
Road east to camp on Raquette River, telephone pole in triangle at	44	23	56.4	74	44	01.5	5,058
Old wood road west, center of main road at, 20 feet southwest to birch tree	44	24	36.2	74	44	39.5	4,886
Panther triangulation station, on cleared mountain locally known as Catamount Mountain, on west side of Raquette River, about 3 miles southeast of Stark post office, and about 20 minutes walk from main highway. Station mark: A bronze triangulation tablet cemented in solid rock. Reference mark: N. Y. State Land Survey signal and station mark, distant 3.05 feet; true azimuth 308° 04′ from station	44	25	33.86	74	45	25.09	6,685
Joe Indian Pond, outlet to, center of road over	44	28	56.6	74	44	37.6	
Blake post office, 1,000 feet north of, T road east to Joe Indian Pond, 12 feet northwest to telephone pole	44	29	21.0	74	44	40.4	2,478
St. Regis River, 500 feet east of, center of Brooklyn Cooperage Co.'s railroad, opposite small boulder, on south edge of road bed	44	29	53.9	74	39	36.6	

Magnetic declination near south border of quadrangle, 16° 41′ W.; near west border of quadrangle, 14° 57′ W.; near northwest corner of quadrangle, 14° 58′ W.; near east border of quadrangle, 14° 23′ W.

CRANBERRY LAKE QUADRANGLE.

From Benson Mines along Cranberry Lake R. R. and highways southeast to Wanakena, thence south along old roadbed to Webb triangulation station. (By C. B. Kendall in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Benson Mines, 0.2 mile east of residence section, at public road crossing the Wanakena Branch R. R.	44 10 09.3	74 59 33.8	.....
Center of trestle over small stream flowing northwest	44 09 14.7	74 58 34.4	7,025
Center of trestle over stream flowing north	44 08 59.1	74 57 17.5	5,829
Wanakena, 1.2 miles northwest of, at old camp, center of trestle over stream flowing north	44 08 31.4	74 55 48.5	7,074
Wanakena, 0.5 mile northwest of, center of track at public-road crossing	44 08 16.5	74 55 27.1	2,173
Wanakena, about 50 feet northwest of station and 100 feet east of (W) company store, in front yard of residence of J. O. Hornele (Wanakena post-office building), in granite boulder; bronze tablet stamped "Prim. Trav. Sta. No. 1, 1916, 1495"	44 08 01.0	74 55 17.6	1,728
Junction with trail over mountain to High Falls, center of old railroad bed	44 07 10.6	74 55 28.7	5,165
At east end of small rock cut, center of old railroad bed; opposite rock painted "1633"	44 06 42.7	74 56 01.1	3,692
Albany road, center of old railroad at crossing of, tree painted 1617	44 06 39.2	74 56 49.2	3,522
Albany road crossing, about 1 mile southwest of, at rock on east edge of roadway painted "U. S. P. T."; center of old railroad bed	44 05 53.4	74 57 47.2	6,285
High Rock, at center of pole bridge over small stream	44 05 36.1	74 57 26.3	2,325
High Rock, about 1 mile southwest of, in very small cut, stone on east edge of old railroad bed	44 04 58.3	74 57 25.8	3,835
At old siding, tie painted "1590 P. T."; center of old railroad bed	44 04 25.8	74 56 55.9	3,950
Small cut just southwest of old camp site, on north side of railroad, stone on south edge painted "1504 P. T."; center of old railroad bed	44 04 32.5	74 56 03.5	3,889
Pole bridge over Glasly Creek, at junction of old railroad bed and wagon road to High Falls, about 500 feet south of old camp site; bridge painted "1599.3 P. T."	44 04 42.6	74 55 06.6	4,278
High Falls, 10 feet west of the northwest corner of kitchen and dining room of Postern Lodge, 35 feet northeast of northeast corner of main building, in top of large granite boulder; bronze tablet stamped "Prim. Trav. Sta. No. 9, 1916." Elevation, 1,618 feet	44 04 09.9	74 54 37.2	3,957
Herkimer-St. Lawrence county line post, north side bears legend "St. Lawrence County 1903 Macombs Purchase G. T. tract 3 Twp—lot—miles T. 45." South side bears legend "Herkimer County 1903 T. and C. Purchase 7.45 miles north of 38"	44 03 52.4	74 54 52.4	2,091
West edge of trail at small stream, t. b. m. and washer in root of dead pine snag	44 03 28.6	74 54 27.5	3,030
Gull Lake trail crossing of Robinson River, on stone in center of, painted "P. T. U. S."	44 03 05.9	74 54 13.1	2,532
Gull Pond, about 500 feet north of north end of, 580 feet along trail from crossing of the outlet on east side of High Falls-Gull Lake trail, in granite boulder; bronze tablet stamped "Prim. Trav. Sta. No. 10, 1916 N. Y." Elevation, 1,882 feet	44 02 49.4	74 53 37.4	3,099
Crocker Lake outlet, center of old pole bridge at old Albany road crossing of, log painted "P. T."	44 02 36.5	74 53 30.6	1,399
Crocker Lake, 800 feet north of, south edge of trail, in root of birch tree; copper nail and washer, tree painted "B. M. 1994 P. T."	44 02 18.1	74 53 12.9	2,275
Top of hill, east edge of road, large pine tree painted "2087 P. T."	44 02 09.8	74 52 52.9	1,689
Gull Lake, south end of, on land of the Webb estate, 15 feet south of the southeast corner of porch to George W. Muir's residence, in rock; bronze tablet stamped "Prim. Trav. Sta. No. 11, 1916 N. Y." Elevation, 2,038 feet	44 01 18.6	74 53 00.4	5,226
Gull Lake, extreme southeast end of, on east edge of old tote road; small jack pine painted "U. S. P. T."	44 00 46.7	74 53 24.0	3,654
Owens Lake, 50 feet south of trail to, 20 feet west of bank of lake on western shore, center of old log road, a log 10 feet north is painted "U. S. P. T."	44 00 54.8	74 53 34.8	1,134
Owens Lake, about 200 feet east of east edge of, in old log road; a clump of three pine trees	44 00 48.5	74 54 08.4	2,532
Rand Lake, 500 feet south of, near trail, 40 feet north of small stream; pine tree painted "U. S. P. T."	44 00 27.6	74 54 22.9	2,365
Webb triangulation station, about 0.2 mile north of, at north edge of small grassy pond; pine tree painted "U. S. P. T."	44 00 02.4	74 54 13.2	2,660

Magnetic declination for southwest part of quadrangle, 14° 40′ W. (Range from 12° 4′ to 16° 50′.)

CRANBERRY LAKE QUADRANGLE—Continued.

From Gull Lake east along highways near south border of quadrangle to Smiths Ledge triangulation station.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
At foot of long hill, center of pole bridge over stream, bridge painted "U. S. P. T."	44	01	03.5	74	52	11.3	.....
Old gate to pole fence, at south end of small pond north of road, center of road	44	00	28.5	74	51	35.1	4,424
Junction of Gull Lake-Nehasane road with road southwest to Nigger Lake, 10 feet east of t. b. m., nail and washer in beech snag	44	00	09.8	74	51	10.0	2,642
Hamilton-Herkimer county line post, on north edge of road, 1.4 miles east of junction with Nigger Lake road; iron post has plate on east side marked "Hamilton County 1900" and one on west side marked "Herkimer County 1900"; also has a small disk on south side stamped "No. 141–35.64 miles"	44	00	03.6	74	50	42.6	2,109
Gull Lake, 3.4 miles east of, 300 feet west of where road strikes Partloe Lake shore, at foot of small hill and 800 feet west of point where wagon road crosses old railroad bed, 30 feet south of Gull Lake-Nehasane road, in rock; bronze bench-mark tablet stamped "Prim. Trav. Sta. No. 13, 1916 N. Y." Elevation, 1,806 feet	44	00	04.4	74	49	57.5	3,306
North edge of road, on boulder; painted square and t. b. m. 189.6 P. T	44	00	12.1	74	48	54.5	4,673
North edge of road, on boulder; painted square, a tree near by is painted "t. b. m. 1910 P. T."	44	00	31.1	74	47	48.6	5,198
Fork at road east up mountain to Smiths Ledge; center of plank bridge	44	00	17.4	74	47	12.7	2,974
Smiths Ledge triangulation station (a 3-point secondary station), situated in Long Lake town, on the west side of Lake Lila, just above the station of Nehasane on a ledge of rock looking to the northeast and south. Station mark: A copper bolt on the highest part of rock ledge at northeast end of ledge and 4 feet south of the open side of an observation house	44	00	24.33	74	46	39.07	2,561

Magnetic declination for line, 14° 09′ W.

From Smiths Ledge triangulation station northeast along railroad to Robinwood. (A checked spur line.)

Nehasane, 200 feet west of station, northwest of track, in face of rock ledge; bronze tablet stamped "Prim. Trav. Sta. No. 14, 1916" N. Y. Elevation, 1,789 feet Albany	44	00	15.4	74	46	38.2	.....
Opposite milepost H 89; center of track	44	01	08.9	74	46	06.4	5,889
Lake Lila; concrete culvert over inlet; iron plate painted "70 *MA*"	44	01	24.3	74	46	02.0	1,597
Opposite milepost H 90; center of track	44	01	54.8	74	45	35.9	3,629
Robinwood station, east end of siding; point of switch	44	02	33.0	74	44	58.5	4,735

From Newton Falls northeast along highway to Cooks Corners, thence southeast to Cranberry Lake.

Newton Falls, 150 feet north of Newton Falls Hotel, 4 corners, 20 feet west of a telegraph pole	44	12	43.7	74	59	23.2	.....
East Branch of Oswegatchie River, center of iron bridge over	44	13	11.4	74	57	54.0	7,073
Milepost 2, center of road opposite	44	13	09.5	74	57	03.1	3,711
Crane Pond outlet, center of road over	44	13	29.3	74	56	41.0	2,570
Newton Falls 3-mile post, telegraph pole on edge of road, to which sign is nailed	44	13	48.7	74	56	23.7	2,336
Moose Head Pond outlet, center of iron bridge over	44	14	08.7	74	56	07.3	2,345
Plank bridge over small stream, center	44	14	21.8	74	54	49.8	5,797
Cooks Corners, about 4 miles northwest of Cranberry Lake post office, in southeast corner of concrete porch to Cooks Hotel; bronze tablet stamped "Prim. Trav. Sta. No. 2, 1916 N. Y. 1481"	44	14	29.5	74	53	06.6	7,547
Watering trough on edge of road	44	13	54.0	74	52	42.8	3,990
At old cabin near top of hill, 15 feet south of road; telegraph pole blazed and marked with blue crayon "U. S. P. T."	44	13	31.6	74	52	34.4	2,348
At bend in road southeast, south edge of road; telegraph pole blazed and marked "U. S. P. T." with blue crayon	44	13	12.4	74	51	37.2	4,596
Cranberry Lake, 300 feet west of dam at foot of; T road south across river	44	13	14.2	74	50	59.2	2,770
Cranberry Lake, west base, in old cement engine foundation of the Bissell Bros. sawmill, now abandoned and known as the Bissell mile point, about 550 feet southwest of Windsor Hotel. It is 10 feet from lake bank and 89 feet east of old burner site. The land is now owned by M. J. Brainard, and tablet is 74 feet northwest of the northwest corner of his boathouse. Tablet stamped "Prim. Trav. Sta. No. 3, 1916 New York 1492"	44	13	22.32	74	50	27.15	2,476
Cranberry Lake east base, in round block of concrete, 10 feet west of gate, about 70 feet south of center of front porch of the White Birches, on north shore of lake and at the bend of Cranberry Lake village. Station is 15 feet back of lake bank and 30 feet east of walk to boat landing. Tablet stamped "Prim. Trav. Sta. No. 4 1916 New York 1502"	44	13	10.30	74	50	01.33	2,240

CRANBERRY LAKE QUADRANGLE—Continued.

Stations on Cranberry Lake determined by secondary triangulation based upon primary traverse positions.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Columbian: Flag pole just north of the shore end of boat landing at the new Columbian Hotel	44 13 06.76	74 50 30.02	[a]1,590
Howland Point: A flag on leaning birch tree on point just east of Fred Howland's residence	44 12 47.38	74 50 24.08	[a]3,545
Station 1, Green Point: On large rock about 300 feet off the west shore at Green Point and 400 feet northeast of Mr. Green's cottage. Signal: Pole quadripod with flag. Station mark: Hole drilled in solid rock and "U. S. 1" chiseled thus: ⊙ U. S. 1	44 12 10.51	74 50 17.64	.....
Station 2, Idlewild: Station is on concrete retaining wall about 80 feet southeast of the southeast corner of Mr. Wilder's cottage Idlewild. It is about 8 feet south of a small birch tree which grows on the point at edge of wall. Signal: Pole quadripod with flag. Station mark: Hole drilled in concrete with "U. S. 2" chiseled thus: ⊙ U. S. 2	44 11 43.67	74 50 24.14	2,759
Station 3, Flat Rock: On the extreme point of the Flat Rock, a well known point of rock just northwest of Birch Island. Station is at the water edge. Signal: Pole quadripod having white sides and a flag. Station mark: A ½-inch hole 2 inches deep and around this is a 1½-inch hole ¼ inch deep with "U. S. 3" cut in the stone thus: ⊙ U. S. 3 The holes were found already drilled and resemble those used by Colvin in setting his stations	44 11 09.68	74 50 33.42	3,508
Colvin station No. 294: On point of land on the west shore southeast of Birch Island, and northwest of the west end of Joe Indian Island. This is station 294 of the N. Y. State Land Survey by Colvin. Signal: Large pole quadripod with sawed lumber sides (the original signal). A pole carrying targets was set over station (instrument over center). Station mark: Brass, nickle-plated plug in solid rock bearing the inscription "N. Y. S. Land Survey by Colvin 1896 Sta. No. 294"	44 10 27.40	74 50 39.04	4,301
Station 4: On a stone at the extreme western point of small island about 600 feet south of Colvin station No. 294 and northwest of the west end of Joe Indian Island. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole in top of rock with "U. S. 4" chiseled thus: ⊙ U. S. 4	44 10 17.51	74 50 38.06	1,005
Station 5: On a 5-foot by 8-foot rock at edge of water at point of west shore of lake nearly opposite the west end of Joe Indian Island. Signal: Pole quadripod with white side and flag. Station mark: Drill hole with "U. S. 5" cut in rock thus: ⊙ U. S. 5	44 10 09.84	74 50 47.84	1,054
Station 6: On rock at water's edge at the southeast end of an island near west bank of lake and about ¼ mile northeast of Howlett's cottage. Signal: Pole quadripod with white sides and flag. Station mark: Hole drilled in center of rock with "U. S. 6" chiseled thus: ⊙ U. S. 6	44 09 58.40	74 51 09.81	1,976
Station 7, Howlett House: On large granite boulder 15 feet west of west shore of lake, 100 feet southeast of Ames Howlett's cottage, and 75 feet south of west end of boat landing. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole with "U. S. 7" cut in top of rock thus: ⊙ U. S. 7	44 09 47.84	74 51 33.50	2,032
Station 8, Howlett Island: On small rock just east of a large rock near the northeast edge of the most western of two islands in flow just south of Ames Howlett's cottage. Signal: Pole quadripod with white sides and flags. Station mark: Drill hole in top of rock with "U. S. 8" chiseled in stone thus: ⊙ U. S. 8	44 09 32.91	74 51 36.33	1,526
Station 9: On large flat stone at edge of water on the west shore of lake about 1,000 feet north of the north point formed by the junction of the Oswegatchie River and Dead Creek Flow. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole in top of rock with "U. S. 9" chiseled in rock thus: ⊙ U. S. 9	44 09 21.22	74 51 58.51	2,004

[a] From West Base.

CRANBERRY LAKE QUADRANGLE—Continued.

Stations on Cranberry Lake determined by secondary triangulation based upon primary traverse positions—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Station 10: On slanting rock at water edge on the west shore of Dead Creek Flow, about 200 feet southwest of point formed by the junction of Oswegatchie River and Dead Creek Flow, about opposite an old mill site on the east shore. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole with U. S. boulder "U. S. 10" chiseled in rock thus: ⊙ 10	44 08 20.59	74 52 29.36	6,538
Station 11: On small stone on west shore of Dead Creek Flow, opposite a point on east shore about half way between old sawmill site and Government works on point. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole in top of stone with "U. S. 11" chiseled thus: U. S. ⊙ 11	44 08 04.47	74 52 41.68	1,863
Station 12: On small boulder on west shore of Dead Creek Flow, opposite a point on the east shore about half way between old sawmill site and Cat Mountain boat landing, about 1,000 feet east of old lumber camp on west shore. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole in top of boulder with "U. S. 12" chiseled in stone thus: U. S. ⊙ 12	44 07 19.67	74 53 19.32	5,303
Station 13: On bare rock ledge near the northeast end of first hill north of Cat Mountain boat landing, on east shore of Dead Creek Flow and about ¼ mile from water edge. A large boulder is south 20 feet from station, another southwest 25 feet, and a third east 15 feet. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole in stone ledge with "U. S. 13" cut in rock thus: U. S. ⊙ 13	44 07 06.79	74 53 02.30	1,800
Cat Mountain flag	44 06 02.32	74 51 56.05	8,123
Station 14: On the second rock ledge above the east shore of Dead Creek Flow, southeast of old Government works, about 2,000 feet southwest of old sawmill site. Station is not on the highest point of hill. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole on highest part of bluff and "U. S. 14" chiseled in stone thus: U. S. ⊙ 14	44 07 41.33	74 52 18.51	.....
Station 15: On small rock on point of the east shore of lake, opposite the junction of the Oswegatchie River and Dead Creek Flow. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole on highest point of rock with "U. S. 15" chiseled in stone thus: U. S. ⊙ 15	44 09 08.18	74 51 41.00	9,210
Station 16: On point of east shore of lake where lake bends south, opposite Ames Howlett's cottage on west shore. Station is on solid rock 30 feet south of north bank and 100 feet northeast of the extreme point. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole in solid rock with "U. S. 16" chiseled in top thus: U. S. ○ 16	44 09 43.07	74 51 12.77	.....
Station 17: On north side near west end of small island, just west of where the flow or channel south of Joe Indian Island joins the river channel. Island is thickly covered with small pines. A cranberry bog is just northwest of the station. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole in the most western of three rocks near water edge. "U. S. 17" is chiseled on rock thus: U. S. ○ 17	44 09 56.29	74 50 47.55	2,274
Station 18, Pine Island: On large rock at extreme east end of Pine Island, which lies about south from Gull Rock and Birch Island and is just north of a point on Joe Indian Island about one-third of its length from west to east. Signal: Pole quadripod with white sides and flag. Station mark: Hole drilled in top of rock with "U. S. 18" chiseled in rock thus: U. S. ○ 18	44 10 19.47	74 49 57.94	4,311
Station 19, Gull Rock: On Gull Rock, a very prominent rock just south of Birch Island. Top of rock is a sharp point about 10 feet above water. Station is on the southwest edge of rock. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole in rock with "U. S. 19" chiseled thus: U. S. ○ 19	44 10 41.79	74 50 13.42	2,526

CRANBERRY LAKE QUADRANGLE—Continued.

Stations on Cranberry Lake determined by secondary triangulation based upon primary traverse positions—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Station 20, Birch Island: On solid stone near north end of Birch Island, about 100 feet south of extreme north end of the island and 20 feet southeast of a picnic table. Signal: Pole quadripod with flag. Station mark: Drill hole in rock with "U. S. 20" chiseled thus: ⊙ U. S. 20	44 11 01.76	74 50 09.77	2,039
Station 21, Wilcox: On large granite boulder on lake bank about 75 feet south of Mr. Wilcox's cottage and 12 feet south of a large birch tree and about 50 feet east of board walk to landing stage. Signal: Pole quadripod with white sides and white flag. Station mark: Drill hole in top of boulder with "U. S. 21" chiseled thus: ⊙ U. S. 21	44 11 05.94	74 49 35.76	2,515
Station 22, Lone Pine: On small stone near center of Lone Pine Island. Signal: Pole quadripod with flag. Station mark: Hole drilled in rock with "U. S. 22" cut in stone thus: ⊙ U. S. 22	44 12 17.60	74 50 02.28	7,509
Abbott: Center of chimney of Mr. Abbott's boat house, on east shore of lake, at foot of Bear Mountain	44 12 41.12	74 49 54.19	4,814
Station 23, Union Point: On large boulder on west side of Union Point, which is the first point west of Balderson's Hotel. Station is about 40 feet northwest of extreme south end of point. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole in top of boulder with "U. S. 23" chiseled on rock thus: ⊙ U. S. 23	44 10 57.76	74 49 26.71	.....
Colvin station No. 295: A station of the N. Y. State Land Survey on the north side of Eagle Island, which is about 1,500 feet southeast of Balderson's Hotel, on north shore of lake. Station is about 15 feet south of water edge at north point of island. Signal: Large pole quadripod with boards on sides. Station mark: Standard State Survey nickel plug in solid rock, plug stamped 'N. Y. S. Land Survey, V. Colvin, Supt. 1896, No. 295"	44 10 50.61	74 48 46.98	2,985
Station 24, Brandy Brook: On rock ledge on north bank of lake where Brandy Brook flow joins the lake proper. Ledge forms the first point east of Balderson's Hotel and is nearly due east of Eagle Island or Colvin station 295. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole in top of ledge with "U. S. 24" chiseled thus: ⊙ U. S. 24	44 11 00.71	74 48 16.06	2,475
Station 25, Sears Island: On large boulder on the west side of Sears Island, which is on the north shore of the junction of east inlet or bay with the lake proper and is about three-fourths of a mile nearly north of the Forestry School camp. Signal: Pole quadripod with white sides and flag. Station mark: Drill hole in top of boulder with "U. S. 25" cut in rock thus: ⊙ U. S. 25	44 10 15.89	74 47 48.15	4,974
Forestry Camp: On large boulder at water edge, 100 feet south of boat landing at Syracuse University Summer Forestry Camp, which is on the east shore of lake near mouth of Sucker Brook. Signal: Pole quadripod with white sides and flag. Station mark: U. S. G. S. standard b. m. tablet in top of boulder stamped "Prim. Trav. Sta. No. 7, 1916" New York	44 09 24.20	74 48 01.86	5,329

From triangulation station 12 at south end of Cranberry Lake northwest along old railroad bed to P. T. S. No. 1 at Wanarena.

Old camp site, 300 feet west of, at junction of two branches; center	44 07 31.4	74 53 55.3	.....
Old camp site; culvert over small stream	44 07 42.6	74 54 14.9	1,830
Branch road east, opposite post painted 1528; center of old road bed	44 07 59.3	74 54 44.4	2,733

CRANBERRY LAKE QUADRANGLE—Continued.

From Cranberry Lake along Grasse River R. R. near north boundary.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Cranberry Lake, about 1 mile north of, at east end of Y; point of switch	44 13 51.3	74 49 34.3	.....
Lines opposite station, 570 feet north of old road crossing, center of track	44 14 38.0	74 48 30.8	6,612
On islands in lake.			
Joe Indian Island, at most northern point and about one-third of its length from east toward west end; flag in pine tree	44 10 13.7	74 49 38.3	3,853 (To Gull Rock.)
Buck Island	44 09 29.5	74 48 39.4	2,791 (To Forestry Camp.)

LONG LAKE QUADRANGLE.

Along New York Central R. R., Ottawa Division, in northwest part of quadrangle. (By C. B. Kendall in 1916.)

New York Central R. R., opposite milepost T 3–0 125, center of track	44 14 51.3	74 29 33.5	.....
Public road crossing New York Central R. R., 0.6 mile northwest of Tupper Lake Junction	44 14 45.4	74 29 25.1	859
Tupper Lake Junction, railroad crossing at	44 14 29.8	74 28 44.7	3,340

NICHOLVILLE QUADRANGLE.

East along highways near south border of quadrangle. (By C. B. Kendall in 1916.)

Azure triangulation station, on a cleared mountain locally known as Blue Mountain, about 4 miles southwest from Spring Cove station on the New York Central R. R. A good trail from the Blue Mountain House to the summit. Station mark: A bronze tablet cemented in solid rock marked "U. S. Geological Survey, New York"	44 32 28.19	74 30 04.51	.....
Schoolhouse No. 10, 120 feet south of front door of, 80 feet north of front door of house of Peter Wilmet, 30 feet east of center of public road from Stark to Wish, in outcrop of rock ledge; bronze tablet stamped "Prim. Trav. Sta. No. 21, 1916, N. Y."	44 30 14.2	74 44 14.1	.....
Old bridge over small stream, center of	44 30 40.2	74 43 05.7	5,620
Junction of woods road west to school No. 10 with automobile road to Wilsour Camp, on east edge of automobile road, maple tree	44 30 46.3	74 42 25.8	2,963
Egg Pond, north end of, on north end of road, telephone pole	44 30 46.8	74 41 40.0	3,320
Five Mile Camp or Balsam Lodge, on St. Regis River, on the 5-mile level, flag pole in front of	44 30 16.9	74 40 37.2	5,472
St. Regis River, at old log-road crossing, center of	44 30 01.8	74 40 07.2	2,661
East along old road bed of Brooklyn Cooperage Co.'s railroad near south border of quadrangle.			
Long Pond outlet, or Alder Brook, center of old trestle over; stringer marked with blue kiel "P. T."	44 30 11.4	74 38 47.4	.....
Old trestle, over small stream, just southeast of old siding, center of	44 30 30.0	74 37 13.4	7,073
Old trestle over small stream, center of	44 30 31.7	74 36 47.2	1,913
East along highways near south border of quadrangle.			
Franklin–St. Lawrence county line, 12 feet north of center of road bed at, in small boulder; bronze tablet stamped "Prim. Trav. Sta. No. 22, 1916 N. Y."	44 30 14.3	74 34 48.2	8,807
Mud Pond (?), center of old trestle over outlet to	44 30 18.2	74 33 56.6	3,769
Old house, on south edge of road bed, northeast corner of	44 30 16.3	74 32 47.0	5,049
Alder Brook, center of trestle over	44 30 11.2	74 31 27.5	5,794

SANTA CLARA QUADRANGLE.

East along highways in southwest corner of quadrangle. (By C. B. Kendall in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Number 4 Camp, public-road crossing of old railroad road bed at.	44 31 15.6	74 29 51.7	.....
Blue Mountain House, 1 mile south of, road forks, 15 feet north to tree with sign, "St. Regis Falls 12 miles; Blue Mountain House, 1 mile"	44 31 30.8	74 29 36.8	1,885
Log schoolhouse, 100 feet southwest of, at trail north to Azure triangulation station, center of main road	44 32 07.6	74 29 14.8	4,057
Blue Mountain House, cement walk in front of, center of public road	44 32 17.5	74 29 04.9	1,233

ST. REGIS QUADRANGLE.

Point on checked spur line near west edge of quadrangle. (By C. B. Kendall in 1916.)

Milepost T 12–O 116 on New York Central R. R., 50 feet northwest of, 25 feet north of center of track, in boulder; bronze tablet stamped "Prim. Trav. Sta. No. 18, 1916 N. Y."	44 21 16.1	74 29 55.4	.....

STARK QUADRANGLE.

East along Grasse River R. R. and highways near south border of quadrangle. (By C. B. Kendall in 1916.)

Trestle over creek, painted "1403 W–11"; 700 feet north along railroad to center of another trestle over stream painted "1400 W–5"	44 15 06.7	74 48 34.6	.....
Carter station, 0.7 mile west of, 20 feet north of Grasse River R. R. track in large boulder; bronze tablet stamped "Prim. Trav. Sta. No. 5, 1916 N. Y. Elev. 1,417 feet"	44 15 14.6	74 48 16.3	1,556
Carter station, 40 feet south of, center of track at road north	44 15 11.1	74 47 26.4	3,652
Brandy Brook spur station, point of frog to spur	44 14 57.2	74 46 25.9	4,625
Grasse River, center of trestle over	44 15 03.0	74 45 57.1	2,178

North along highways near north part of east edge of quadrangle.

Panther triangulation station (described under Childwold quadrangle), T road east to Raquette River, center of main road at	44 25 15.3	74 45 04.2	2,412
Second-class T road east to Raquette River, center of main road at	44 26 02.0	74 45 00.3	4,738
Raquette House, 25 feet west of front entrance to, forked maple tree	44 26 59.9	74 46 02.7	7,405
Stark, at forks of public T road northeast to Joe Indian Lake, 35 feet east to signboard "Pinehurst, Joe Indian Lake, 4.5 miles"	44 27 00.9	74 46 55.8	3,850
Plank bridge over small stream, center of	44 28 06.1	74 45 54.1	7,978
Blake, Raquette River at, center of iron bridge over	44 28 42.9	74 45 43.6	3,800

Magnetic declination for north part of quadrangle, 14° 32′ W.

TUPPER LAKE QUADRANGLE.

East along highways in northeast corner of quadrangle. (By C. B. Kendall in 1916.)

Concrete bridge over creek, center of	44 14 31.6	74 36 01.3	.....
Piercefield, 0.75 mile north of, red barn on east edge of road, center of road opposite	44 14 00.2	74 34 40.6	6,682
Piercefield, 300 feet south of store at, center of east-west road, at public T road north	44 13 53.3	74 33 54.9	3,396
Piercefield, center of iron bridge over Raquette River at	44 13 54.4	74 33 36.6	1,335
Spring in edge of swamp, on south edge of public road	44 14 15.6	74 33 02.2	3,305
Franklin-St. Lawrence county line, about 1,000 feet west of the Beechwood Inn, center of Piercefield-Tupper Lake road	44 14 38.8	74 32 09.2	4,515
Small stream, culvert over	44 14 54.0	74 30 06.1	9,094

Magnetic declination for northeast corner of quadrangle, 16° 33′ W.

Dannemora, Mooers, Plattsburg, and Rouses Point quadrangles (including Plattsburg Training Camp).

CLINTON COUNTY.

The following geographic positions, on North American datum, were determined in 1916 by F. W. Crisp, and are based on Plattsburg, North Base station of the U. S. Coast and Geodetic Survey.

Lines were run north, south, and west from Plattsburg, but no permanent station marks were set.

PLATTSBURG QUADRANGLE.

From Plattsburg southwest along railroad and highways via Valcour to Laphams Mills. (By F. W. Crisp in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Plattsburg North Base, on the U. S. Military Reservation about 295 meters from Macomb Street. The line passes through the reservation, in front of the artillery barracks, then through the young growth, and across an open field belonging to Bentley Sherman and terminates on the plateau about 60 meters from the brick house owned by Sherman and 7 meters from the fence on the east side of the lake or county road. The monument marking the north end is a limestone block 3.5 feet long, squared at the top to 6 inches by 6 inches, and has a bolt of lead sunk in the center and marked with cross lines	44 41 32.85	73 26 52.3	.....
Plattsburg, 0.5 mile south of, center of intersection of Lake Shore and Peru State highways	44 41 08.7	73 27 03.4	2,574
Plattsburg, 0.8 mile south of, along Lake Shore road, at north side of Rifle Range, at T roads north, south, and west, center of intersection	44 40 53.6	73 26 54.0	1,679
Plattsburg, 2.5 miles south of, 0.3 mile north of Cliff Haven station, crossing of Lake Shore road and Delaware & Hudson R. R., center of intersection	44 39 44.9	73 26 40.9	7,019
Bluff Point station, center of tracks opposite	44 39 02.6	73 26 52.7	4,370
Bluff Point, 0.5 mile south of, second-class road crossing, center of track	44 38 36.7	73 27 02.9	2,718
South Junction station, 430 feet north of, trestle over Salmon River, center	44 38 02.0	73 27 16.5	3,650
South Junction station, 0.6 mile south of, east-west road crossing, center of track	44 37 41.5	73 27 14.5	2,080
Second-class road crossing, center of track	44 36 45.3	73 27 01.6	5,772
Valcour, 0.3 mile north of, east-west road crossing, center of main track	44 36 29.5	73 26 54.85	1,674
Valcour, 0.6 mile west of, T roads east, west, and north, center of intersection	44 36 25.6	73 27 35.4	2,958
Valcour, 1.3 miles west of, T roads east, west, and north, center of intersection	44 36 21.5	73 28 19.85	3,240
Valcour, 1.4 miles west of, T roads east, west, and south, center of intersection	44 36 20.45	73 28 29.9	730
Valcour, 1.6 miles west of, T roads east, west, and south, center of intersection	44 36 19.3	73 28 42.4	910
Valcour, 2.7 miles west of, Delaware & Hudson R. R., public-road crossing, center of track	44 36 17.8	73 29 47.0	4,674
Laphams Mills, 0.6 mile northeast of, on Peru road, crossroads	44 36 16.9	73 29 57.9	795
Near Plattsburg.			
Plattsburg, 1.0 mile west of, T roads east, west, and south, center of intersection	44 42 26.7	73 28 30.5	7,239
Plattsburg, 0.5 mile west of, T road south	44 42 31.9	73 27 27.9	4,554
Plattsburg, north side of Delaware & Hudson R. R. crossing	44 42 32.8	73 27 19.4	625
Plattsburg, street crossing over Delaware & Hudson R. R., center of main track under	44 42 00.0	73 27 04.1	3,501
Plattsburg, north side of Delaware & Hudson R. R. crossing	44 42 32.8	73 27 19.4	.....
Plattsburg, opposite old Lozier Motor Works, crossroads	44 42 34.2	73 27 06.8	921
Plattsburg, 1.0 mile northeast of, in Cumberland Head road, center of iron bridge over Dead Creek	44 43 03.9	73 26 36.4	3,730
Plattsburg, 1.5 miles northeast of, T road north, center of intersection	44 43 21.4	73 26 22.3	2,045
Plattsburg, 3.0 miles north of, second-class road west	44 44 31.8	73 25 31.9	8,009

Magnetic declination at north base (Plattsburg), 14° 15′ W.; at southwest corner of area, 14° W.

MOOERS QUADRANGLE.

Along highways in southeast part of quadrangle. (By F. W. Crisp in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
West Chazy station, 100 feet south of, at crossing of macadamized highway, center of main track	44	49	16.1	73	30	15.1	.....
West Chazy, opposite hotel, crossroads, center of intersection	44	49	14.4	73	30	32.2	1,240
West Chazy, 1.0 mile west of, T road, center of triangle	44	49	09.2	73	31	26.3	3,922
West Chazy, 1.5 miles southwest of, T road east	44	48	16.8	73	31	09.1	5,449
West Chazy, 2.0 miles southwest of, T road west	44	47	43.9	73	30	58.3	3,419
Beekmantown, 1.5 miles northwest of, T road west	44	47	10.5	73	30	41.6	3,592
Beekmantown, 1.0 mile northwest of, T road west	44	46	28.2	73	30	22.5	4,501
Beekmantown, 0.5 mile west of, T road north	44	46	10.8	73	30	09.9	1,981
Beekmantown, 1.5 miles southwest of, T road south	44	45	18.2	73	30	33.7	.....

DANNEMORA QUADRANGLE.

North along highways near east border of quadrangle. (By F. W. Crispin, 1916.)

Laphams mills, 0.8 mile northwest of, crossroads	44	36	12.5	73	30	50.2	.....
Laphams Mills, 2.0 miles north of, T roads north, south, and east	44	37	07.5	73	31	12.35	5,790
Laphams Mills, 2.4 miles north of, T roads north, south, and west	44	37	28.0	73	31	11.0	2,084
Schuyler Falls, 2.3 miles east of, crossroads	44	38	22.2	73	30	58.3	5,558
Salmon River, 1,000 feet north of, 1.1 miles south of Pulp Mill, crossroads	44	39	10.2	73	30	43.8	4,979
Delaware & Hudson R. R. (Chateaugay Branch) and public-road crossing, center of track	44	39	46.9	73	30	33.9	3,796
T roads, north, south, and east, center of intersection	44	39	58.0	73	30	29.9	1,144
Pulp mill (Saranac River), 300 feet south of, crossing of railway and highway	44	40	03.3	73	30	28.6	551
Pulp mill (Saranac River), 0.6 mile north of, T roads north, south, and east, center of triangle	44	40	34.3	73	30	41.7	3,277
Sunrise Hotel, 0.7 mile south of, crossroads, center of intersection	44	41	07.0	73	31	01.4	3,601
Sunrise Hotel, crossroads	44	41	42.15	73	31	02.8	3,564
Morrisonville, 1.5 miles northeast of, crossroads	44	42	16.9	73	31	34.75	4,206
Sunrise Hotel, 1.2 miles northwest of, road to house	44	42	21.0	73	30	10.4	6,110
Morrisonville, 1.5 miles northeast of, crossroads	44	42	16.9	73	31	34.75	.....
Sunrise Hotel, 1.2 miles north of, T road northeast	44	42	33.4	73	31	51.3	2,707
Sunrise Hotel, 2 miles north of, T road north	44	42	59.2	73	31	41.4	2,361
Sunrise Hotel, 2.5 miles north of, T road east	44	43	11.95	73	31	13.95	4,379
Beekmantown, 3.1 miles southwest of, fence line crossing, center of road	44	43	54.9	73	31	06.4	3,360
Beekmantown, 2.5 miles southwest of, crossroads	44	44	24.9	73	30	46.6	5,482

Magnetic declination at northwest corner of quadrangle, 15° 45′ W.

ROUSES POINT QUADRANGLE.

Along highways in southwest part of quadrangle. (By F. W. Crisp in 1916.)

East Beekmantown, 2.5 miles east of, T road west	44	45	23.3	73	25	10.2	.....
East Beekmantown, 3 miles east of, T road to west	44	45	52.4	73	25	14.0	2,964
Ingraham, 2.8 miles south of, T road east	44	46	13.8	73	25	21.6	2,235
Ingraham, 2.4 miles south of, T road east	44	46	37.5	73	25	30.3	2,475
Ingraham, 1.5 miles south of, crossroads, center of intersection	44	47	27.0	73	25	46.6	5,155
Ingraham, 0.8 mile south of, private road west	44	48	03.4	73	25	56.35	3,749
Ingraham, opposite Patnode's store, T road north	44	48	40.6	73	26	10.1	3,895
Ingraham, 0.8 mile northwest of, T road west, center of intersection	44	49	08.6	73	26	40.3	3,577
West Chazy, 1.7 miles east of, crossroads	44	48	55.6	73	28	37.9	8,580
West Chazy, 0.7 mile east of, crossroads, center of intersection	44	49	18.9	73	29	42.4	5,217

Along highways in southwest part of quadrangle.

Beekmantown, crossroads at stores	44	46	15.6	73	29	33.1	.....
Beekmantown, 1 mile south of, T road west	44	45	20.6	73	29	31.2	5,577

OREGON.

TRIANGULATION STATIONS.

Cline Falls, Heisler, Prineville, Round Mountain, and Twickenham quadrangles.

CROOK, JEFFERSON, AND WASCO COUNTIES.

During the season of 1916 Charles Hartmann extended triangulation southwest from stations Pisgah and Wagner. Eleven new stations were occupied, and nine points were located by intersections, all on approximate North American datum.

For other positions in Oregon see U. S. Geological Survey Bulletins 122, 216, 245, 440, 496, 551, and 644; Part I of the 18th, 19th, and 20th Annual Reports; and U. S. Coast and Geodetic Survey Special Publications No. 13 and No. 31.

BLACK CRATER, DESCHUTES COUNTY, OREG. (Not occupied).

A conical butte on an east spur of the Cascade Range, about 9 miles west of Sisters post office. The McKenzie road crosses the range about 2 miles north of station.

Station mark: Cairn on highest part of butte.

[Latitude 44° 15′ 59.17″ (H); 44° 15′ 59.3″ (S). Longitude 121° 44′ 50.72″ (H); 121° 44′ 51.5″ (S.)

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Horsepasture (S)	58	31	49.3	238	17	37.5	4.50327	19.80
Scott (S)	78	07	11.3	258	00	12.6	4.13374	8.45
Lookout (S)	79	34	10.1	259	18	11.5	4.49155	19.27
Gray Butte (H)	251	47	54.0	72	15	02.7	4.7345382	33.720
Cline Butte (H)	272	09	43.9	92	28	22.3	4.5511577	22.106
Pilot Butte (H)	301	19	54.2	121	39	22.0	4.6401944	27.126

(H)=positions by Hartmann; (S)=positions by Staack in 1916.

CLINE BUTTE, CROOK COUNTY, OREG.

An isolated butte immediately southwest of Cline Falls; best reached from Cline Falls by taking wagon road leading to town of Sisters for about 4 miles west, thence south by a well-defined homesteaders' road to the northwest base of main ridge leading to summit. Thence follow the ridge up to summit of butte. It is easy to go on horseback from the base of the ridge to the station.

Signal: A juniper tree 18 feet high, in the top of which was erected a 10-foot pole with two 4 by 5 foot targets.

Station mark: A bronze triangulation tablet, cemented in solid rock 12.6 feet southwest of signal.

True azimuth from tablet to tree, 244° 03′.

[Latitude 44° 15′ 12.56″. Longitude 121° 18′ 08.27″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lava	6 27 58	186 25 47	4.57380	23.289
Triangle	49 05 30	227 55 35	4.40694	15.860
Black Crater	92 28 22.3	272 09 43.9	4.5511577	22.106
Juniper Butte	196 11 29.49	16 15 22.14	4.4210817	16.384
Railroad Pier	209 20 06	29 24 36	4.24462	10.914
Gray Butte	221 29 14.64	41 37 43.23	4.3856762	15.102
Terrebonne School	221 31 15	41 36 22	4.16761	9.140
Sheep Rock	228 38 40.02	48 58 23.13	4.6965862	30.899
Redmond Church	258 31 36	78 36 55	4.01465	6.427
Powell Butte	283 56 24.40	104 10 03.05	4.4290545	16.688
Pine	327 53 00	148 08 34	4.75170	35.079
Pilot Butte	355 37 22.55	175 38 13.76	4.3311839	13.721

GRAY BUTTE, JEFFERSON COUNTY, OREG.

A sharp-pointed butte 7 miles east of Opal City. Best reached by taking road east from Opal City to O. M. Cyrus's ranch. Go 0.25 mile south across field to drain, thence follow drain up to main ridge.

Signal and reference mark: Cairn 8 feet high, with a 6-foot base.

Station mark: A bronze triangulation tablet, cemented in shale rock and 9.1 feet south of signal. True azimuth from tablet to cairn, 182° 56′.

[Latitude 44° 25′ 01.76″. Longitude 121° 06′ 00.52″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Redmond Church	20 24 39	200 21 30	4.23590	10.697
Terrebonne School	41 34 37	221 31 16	3.98201	5.962
Cline Butte	41 37 43.23	221 29 14.64	4.3856762	15.102
Triangle	45 00 40	224 42 16	4.69674	30.909
North Sister	62 49 12.4	242 21 05.5	4.7805197	37.486
Railroad Pier	69 01 35	248 57 39	3.90498	4.993
Black Crater	72 15 02.7	251 47 54.0	4.7345382	33.720
Juniper Butte	129 16 13.84	309 11 37.21	4.0521743	7.007
Teller Butte	211 04 04.56	31 13 00.19	4.5131818	20.255
Samson	227 15 23.14	47 28 54.43	4.5406960	21.580
Sheep Rock	235 31 41.69	55 42 56.59	4.4114538	16.025
Pisgah	265 57 25.34	86 33 46.30	4.8390938	42.898
Lookout Mountain	279 28 53.84	99 59 27.16	4.7700475	36.593
Powell Butte	338 08 58.14	158 14 09.67	4.4250841	16.536
Pilot Butte	20 12 53.06	200 05 16.62	4.6247102	26.185

JUNIPER BUTTE, JEFFERSON COUNTY, OREG.

A double-topped butte 1.5 miles south of Culver and 1.5 miles north of Opal City. Best reached by taking road south from Culver toward Opal City to divide, thence turn west and go up main ridge to summit. Station is situated on the highest point of the east ridge.

Signal and reference mark: A 7-foot cairn, having a 6-foot base and two 3 by 4 foot targets on top.

Station mark: A bronze tablet cemented in shale rock 9.5 feet northeast of signal. True azimuth from tablet to cairn, 27° 22′.

[Latitude 44° 28′ 52.82″. Longitude 121° 12′ 35.55″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cline Butte	16 15 22.14	196 11 29.49	4.4210817	16.384
Teller Butte	230 47 54.47	51 01 27.67	4.5176858	20.466
Samson	244 16 51.35	64 35 00.25	4.5794976	23.597
Sheep Rock	255 57 21.50	76 13 13.74	4.4900307	19.204
Gray Butte	309 11 37.21	129 16 13.84	4.0521743	7.007
Powell Butte	329 34 59.59	149 44 47.37	4.5669179	22.923
Terrebonne School	350 33 00	170 34 15	4.16163	9.015

LAVA, CROOK COUNTY, OREG.

About 11 miles due south of the town of Bend.

Signal: A white flag and target on a pole 15 feet high. Under the target is a cone-shaped pile of logs 8 feet in diameter at the base and 6 feet high. Signal is on the highest point of the butte.

Monument was established by members of the National Forest Service, of Bend, Oreg., and description was furnished by Forest Supervisor. Sights were taken to Forest Service signal.

[Latitude 43° 55′ 05.90″. Longitude 121° 21′ 17.44″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cline Butte	186 25 47	6 27 58	4.57380	23.289
Pilot Butte	200 13 28	20 16 30	4.22820	10.509
Powell Butte	224 30 33	44 46 19	4.63524	26.828

LOOKOUT MOUNTAIN, CROOK COUNTY, OREG.

Best reached by taking road from Prineville to Ochoco ranger station, 26 miles, thence go 0.5 mile east and take road to right leading to Big Summit Prairie. Continue on this road until the divide is reached, thence take road to right to quicksilver mines, and from here take road leading up the mountain to station. It is a three-hour drive from Ochoco ranger station, and the distance is about 9 miles.

Signal and reference mark: Cairn 7 feet high by 6 feet wide with two 3 by 4 foot targets nailed on a 4 by 4 inch pole 15 feet high standing in center of cairn.

Station mark: A triangulation tablet 7.1 feet northwest of cairn, cemented in large rock. True azimuth from tablet to cairn, 317° 24′.

[Latitude 44° 19′ 39.09″. Longitude 120° 22′ 18.95″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Powell Butte	73 13 01.39	252 47 43.01	4.7029651	31.356
Gray Butte	99 59 27.16	279 28 53.84	4.7700475	36.593
Sheep Rock	123 55 40.15	303 26 19.06	4.6446228	27.414
Pisgah	217 00 41.23	37 06 26.46	4.2582450	11.261

MAUPIN BUTTE (2), WASCO COUNTY, OREG.

A haystack-shaped butte, facing northwest and southeast 8 miles southeast of Antelope. Easily reached by taking the Shaniko–Clarno road to Cox's ranch, 4.5 miles southeast of Antelope and 1 mile northeast of Gold Camp, where Harry Smith resides; thence continue up drain, following dim road, until summit is reached. Signal is readily seen from the summit.

Signal: A cairn 5 feet high with a 6-foot base, having a large juniper bush standing in its center. It is 7.2 feet north of station mark. True azimuth from cairn to station mark, 351° 21′.

Station mark: A triangulation tablet cemented in solid rock.

[Latitude 44° 52′ 51.44″. Longitude 120° 36′ 51.64″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tompkins	4 55 07.76	184 54 19.66	4.2435994	10.888
Samson	24 58 44.93	204 51 48.23	4.4898828	19.197
Teller Butte	42 35 56.93	222 24 23.01	4.5060285	19.924
Wagner	300 55 32.43	121 03 35.93	4.2447190	10.916

NORTH SISTER, LANE, AND DESCHUTES COUNTIES, OREG. (Not occupied.)

In main Cascade Range, on the northern one of three buttes, locally known as the Three Sisters. The point located is the highest point of rugged summit, which is approximately 0.25 mile long. This point is about 12 miles southwest from Sisters post office.

Station mark: None.

[Latitude 44° 10′ 01.85″ (H); 44° 10′ 01.464″ (C. & G. S.). Longitude 121° 46′ 16.04″ (H); 121° 46′ 17.183″ (C. & G. S).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fairview (C)	47 57 31.4	227 20 53.1	4.981379	59.529
Spencer (C)	79 34 17.3	258 39 03.3	5.033231	67.068
Roman (C)	80 30 32.5	259 08 32.0	5.204400	99.483
Peterson (C)	112 13 06.1	291 22 55.0	5.011964	63.872
Gray Butte (H)	242 21 05.5	62 49 12.4	4.7805197	37.486
Cline Butte (H)	255 28 51.4	75 48 28.3	4.5874685	24.034
Pilot Butte (H)	286 35 36.8	106 55 02.9	4.6117350	25.414

(C)=by Coast and Geodetic Survey in 1903; (H)=by C. Hartmann in 1916.

PILOT BUTTE, CROOK COUNTY, OREG.

A small, round butte, 1.5 miles east of Bend. Best reached by taking road east from Bend to west base of butte, thence go on horseback around the north side and up to summit.

Signal: A wooden tripod, centered over station mark, with two 4 by 5 foot targets, 18 feet from ground and centered over the tablet.

Station mark: A bronze triangulation tablet cemented in solid rock.

[Latitude 44° 03′ 40.01″. Longitude 121° 16′ 54.76″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lava	20 16 30	200 13 28	4.22820	10.509
Triangle	101 51 36	281 40 51	4.32387	13.098
North Sister	106 55 02.9	286 35 36.8	4.6117350	25.415
Black Crater	121 39 22.0	301 19 54.2	4.6401944	27.135
Cline Butte	175 38 13.76	355 37 22.55	4.3311839	13.321
Gray Butte	200 05 16.62	20 12 53.06	4.6247102	26.185
Powell Butte	238 37 31.93	58 50 17.99	4.4566364	17.782
Pine	312 59 19	133 14 03	4.58867	24.100

PINE, CROOK COUNTY, OREG.

A clear-topped, conical butte in the Deschutes National Forest about 4 miles immediately south of Millican's ranch, which is about 28 miles southeast of Bend.

Monument was erected by members of the Deschutes National Forest Office at Bend, and sights were taken to their signal. For directions to reach this point apply to the Forest Supervisor at Bend.

[Latitude 43° 49′ 21,15″. Longitude 120° 55′ 45.16″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pilot Butte	133 14 03	312 59 19	4.58867	24.100
Cline Butte	148 08 34	327 53 00	4.75170	35.079
Powell Butte	174 48 18	354 46 20	4.61840	25.808

PISGAH, WHEELER COUNTY, OREG.

Situated on the highest part of high ridge known locally as Pisgah Mountain, about 8 miles southwest of Mitchell, 5 miles north of Big Summit Prairie, and 7 miles northeast of Round Mountain. To reach the station take road from Prineville to Ochoco ranger station, 26 miles, thence continue to Blake ranger station, 3 miles northwest of Big Summit Prairie; take road from Blake ranger station to summit trail on top of divide, thence go eastward on this trail to Carrol ranger station, 2 miles; 0.25 mile west of ranger cabin is a good trail leading to station, which is 1.5 miles from and about 600 feet above cabin. There is a good pasture at Carrol ranger station.

Signal: A cairn 7 feet high with a 6-foot base, having two 4 by 3 foot targets on fir tree standing in its center. True azimuth from tablet, 151° 27′.

Station mark: A triangulation tablet set in solid rock 5 feet southeast of signal.

[Latitude 44° 27′ 27.66″. Longitude 120° 14′ 05.46″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Lookout Mountain (H)	37	06	26.46	217	00	41.23	4.2582450	11.261
Powell Butte (H)	63	58	22.12	243	27	17.12	4.8192845	40.985
Gray Butte (H)	86	33	46.30	265	57	25.34	4.8390938	42.898
Rooster Rock (H)	109	58	36	289	46	58	4.36914	14.538
Samson (H)	113	56	19.30	293	33	25.84	4.6741595	29.343
Tompkins (H)	133	12	33.35	312	55	46.31	4.6366123	26.913
Wagner (E)	158	31	08.81	338	23	10.75	4.6111267	25.380
Rancheria (E)	189	00	15.48	9	04	24.47	4.6958656	30.848
Baldy (E)	222	13	42.63	42	24	30.09	4.4807326	18.797
Juniper (E)	249	49	29.16	70	07	47.45	4.5661538	22.882
Spanish (E)	278	23	37.73	98	42	59.31	4.5695024	23.060
Suplee (E)	306	27	06.77	126	52	56.66	4.7877728	38.117
Maupin Butte (E)	331	17	09.61	151	29	32.95	4.6931505	30.655

(H)=positions by C. Hartmann in 1916; (E)=positions by J. R. Ellis in 1913.

POWELL BUTTE, CROOK COUNTY, OREG.

One of a group of buttes 2 miles east of Powell Butte post-office and 8 miles southeast of Prineville. The central and highest butte, on which the station is placed, is best reached from Powell Butte post-office. Take county road 1 mile east to ranch and continue east through ranch 0.5 mile to ridge; turn south on ridge, following homesteader's road to its end at old homestead, thence go up main ridge to station.

Signal: A cairn 6 feet high with a 6-foot base and covered with white cloth. There are two 3 by 4 foot targets on its top.

Station mark: A bronze triangulation tablet cemented in solid rock under center of cairn.

[Latitude 44° 11′ 41.26″. Longitude 120° 58′ 34.51″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Lava	44	46	19	224	30	33	4.63524	26.828
Pilot Butte	58	50	17.99	238	37	31.93	4.4566364	17.732
Cline Butte	104	09	03.05	283	56	24.40	4.4290545	16.688
Redmond Church	118	23	19	298	14	59	4.25692	11.227
Railroad Pier	141	30	38	321	21	30	4.44586	17.346
Juniper Butte	149	44	47.37	329	34	59.59	4.5669179	22.923
Gray Butte	158	14	09.67	338	08	58.14	4.4250841	16.536
Sheep Rock	196	12	20.45	16	18	22.12	4.6117848	25.417
Pisgah	243	27	17.12	63	58	22.12	4.8192845	40.985
Lookout Mountain	252	47	43.91	73	13	01.39	4.7029651	31.356
Pine	354	46	20	174	48	18	4.61840	25.808

POLITECHNIKA GDAŃSKA ZAKŁAD GEOLOGII

RAILROAD PIER, JEFFERSON COUNTY, OREG. (Not occupied.)

Southwest pier of railroad bridge over Crooked River, about 4 miles north of Terrebonne.

[Latitude 44° 23′ 28.44″. Longitude 121° 11′ 39.50″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cline Butte	29 24 36	209 20 06	4.24462	10.914
Gray Butte	248 57 39	69 01 35	3.90498	4.993
Powell Butte	321 21 30	141 30 38	4.44586	17.346

REDMOND CHURCH, CROOK COUNTY, OREG. (Not occupied.)

Station mark: Church spire in the southwest corner of street intersection in the most southwesterly part of the town of Redmond. The church is about 2 blocks south and 2 blocks west of post office.

[Latitude 44° 16′ 18.96″. Longitude 121° 10′ 31.22″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cline Butte	78 36 55	258 31 36	4.01465	6.427
Gray Butte	200 21 30	20 24 39	4.23590	10.697
Powell Butte	298 14 59	118 23 19	4.25692	11.227

ROOSTER ROCK, WHEELER COUNTY, OREG. (Not occupied.)

A rocky, isolated bluff 2.5 miles northeast of Trail ranger station and 2 miles south of the northern boundary of the Ochoco National Forest.

[Latitude 44° 31′ 45.4″. Longitude 120° 30′ 41.25″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Samson	117 36 58	297 25 47	4.37909	14.874
Tompkins	155 56 49	335 51 41	4.37448	14.717
Pisgah	289 46 58	109 58 36	4.36914	14.538

SAMSON, JEFFERSON COUNTY, OREG.

On land owned by H. C. Pridy on highest and most southerly part of what is locally known as Blizzard Ridge. Best reached by taking road from Hay Creek 4 miles east to Dunham's place, thence take road to right to point within 0.25 mile west of Kelley's homestead; at this point signal can be seen to the northeast. Continue on road leading in same direction and pass schoolhouse on the northerly edge of a timbered area; thence take private road to left, which winds northwesterly upgrade to homesteader's house. From house drive across open field to station.

Signal: A tripod with 3 by 4 foot targets faced with white cloth; base covered with black cloth.

Station mark: A triangulation tablet cemented in limestone rock, which was placed 9 feet northeast of signal. Azimuth to signal, 56° 44′.

Reference mark: A quart bottle buried 2.5 feet in ground, 14.8 feet south of station mark, and 7.6 feet southeast of signal.

[Latitude, 44° 37′ 43.78″. Longitude 120° 46′ 43.49″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Sheep Rock	25	32	00.11	205	29	44.03	3.9968158	6.168
Gray Butte	47	28	54.43	227	15	23.14	4.5406960	21.580
Juniper Butte	64	35	00.25	244	16	51.35	4.5794976	23.597
Teller Butte	116	50	05.69	296	45	29.23	3.9873002	6.035
Maupin Butte (2)	204	51	48.23	24	58	44.93	4.4898828	19.197
Tompkins	227	28	08.95	47	34	17.08	4.1941355	9.716
Pisgah	293	33	25.84	113	56	19.30	4.6741595	29.343
Rooster Rock	297	25	47	117	36	58	4.37909	14.874

SHEEP ROCK, CROOK COUNTY, OREG.

On highest point in this locality and on most westerly edge of long, high, wooded ridge 10 miles east of Honey Creek. Best reached by taking Hay Creek-Prineville road to first house on east side of road, distance 1.5 miles; thence turn east in private road and go 3 miles up drain in southeasterly direction to Elkins's place. Turn east and go up drain, following main road for 3 miles to Stody's place. The station is 3 miles southeast of Stody's at the head of drain. Follow path up drain past coal mines on the south.

Signal and reference mark: A cairn 6 feet high with 6-foot base 10.5 feet northwest of station mark. Cairn is covered with black and white cloth and has a juniper tree in its top.

Station mark: A triangulation tablet cemented in shale rock. True azimuth from tablet to cairn, 115° 36′; distance, 10.5 feet.

[Latitude 44° 32′ 53.54″. Longitude 120° 49′ 57.33″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Powell Butte	16	18	22.12	196	12	20.45	4.6117848	25.417
Cline Butte	48	58	23.13	228	38	40.02	4.6965862	30.898
Gray Butte	55	42	56.59	235	31	41.69	4.4114538	16.025
Juniper Butte	76	13	13.74	255	57	21.50	4.4900307	19.204
Teller Butte	161	45	35.44	341	43	15.30	4.1475010	8.727
Samson	205	29	44.03	25	32	00.11	3.9968158	6.168
Tompkins	218	56	30.88	39	04	54.93	4.4000172	15.609
Lookout Mountain	303	36	19.06	123	55	40.15	4.6446228	27.414

TELLER BUTTE, JEFFERSON COUNTY, OREG.

Best reached from Hay Creek by taking Hay Creek-Madras road 1.5 miles north, thence turn east on road for 3 miles to private road leading north and up draw, and follow that road until top of plateau is reached. Station is plainly seen from here. Station is situated on the southerly summit of a double-topped butte named Teller Buttes and adjacent to George Long's ranch on the east side.

Signal and reference mark: A cairn 6.5 feet high with a 7-foot base, covered with white cloth, having a small juniper set in the top.

Station mark: A bronze triangulation tablet cemented in solid rock 9.8 feet southeast of signal. Azimuth from tablet to cairn, 127° 29′.

[Latitude 44° 40′ 05.62″. Longitude 120° 53′ 16.88″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Gray Butte	31	13	00.19	211	04	04.56	4.5131818	20.255
Juniper Butte	51	01	27.67	230	47	54.47	4.5176858	20.466
Maupin Butte (2)	222	24	23.01	42	35	56.93	4.5060285	19.924
Tompkins	252	53	16.50	73	04	01.45	4.3245914	13.120
Samson	296	45	29.23	116	50	05.69	3.9873002	6.035
Sheep Rock	341	43	15.30	161	45	35.44	4.1475010	8.727

TERREBONNE SCHOOL, CROOK COUNTY, OREG. (Not occupied.)

Chimney in the middle of the north side of a square, white-painted, two-story schoolhouse in the western part of the town of Terrebonne, on the railroad running to Bend.

[Latitude 44° 21′ 09.14″. Longitude 121° 10′ 48.00″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cline Butte	41 36 22	221 31 15	4.16761	9.140
Juniper Butte	170 34 15	350 33 00	4.16163	9.015
Gray Butte	221 31 16	41 34 37	3.98201	5.962

TOMKINS, JEFFERSON COUNTY, OREG.

Situated on highest part of what is locally known as Axehandle Ridge. Best reached by taking road from Ashwood to Red Jacket mines, distant 5 miles, thence continue on road leading to right and through cultivated land for 1.5 miles; from here a good road winds up to summit of ridge, from which point the signal can be seen to the south.

Signal: A cairn 6.4 feet high with 6-foot base having a juniper tree centered over triangulation tablet.

Station mark: A triangulation tablet cemented in solid rock under cairn.

[Latitude 44° 43′ 25.87″. Longitude 120° 37′ 59.91″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Sheep Rock	39 04 54.93	218 56 30.88	4.4000172	15.609
Samson	47 34 17.08	227 28 08.95	4.1941355	9.716
Teller Butte	73 04 01.45	252 53 16.50	4.3245914	13.120
Maupin Butte (2)	184 54 19.66	4 55 07.76	4.2435994	10.888
Wagner	243 01 37.91	63 10 28.81	4.2693582	11.553
Pisgah	312 55 46.31	133 12 33.35	4.6366123	26.913
Rooster Rock	335 51 41	155 56 49	4.37448	14.717

TRIANGLE, COOK COUNTY, OREG. (Not occupied.)

A partly wooded, conical-shaped butte about 12 miles west of the town of Bend. It is in the southwest part of T. 19 S., R. 8 E., and immediately inside the eastern boundary of the Deschutes National Forest.

For definite directions as to best way of reaching this station, apply to the forest supervisor at Bend, Oreg. as he had established a monument and erected a signal on this point, to which the sights were taken.

[Latitude 44° 05′ 59.33″. Longitude 121° 32′ 22.25″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gray Butte	224 42 16	45 00 40	4.6974	30.909
Cline Butte	227 55 35	48 05 30	4.40694	15.860
Pilot Butte	281 40 51	101 51 36	4.32387	13.098

WAGNER, JEFFERSON COUNTY, OREG.

Situated on highest point on Wagner Butte, a double-topped butte on the west side of John Day River and about 1.5 miles west of Wagner's ranch house. The butte is on the divide between the John Day River and Currant Creek. To reach the station from Fossil take the Fossil-Clarno wagon road to Pine Creek and go down

the creek about 1.5 miles, leave public road and follow private road southwest over divide, thence road down canyon to John Day River. From this point a trail leads up the river to Wagner's ranch. This route can only be used at times of low water, as the river must be forded at several places.

Signal: A cairn of 5 feet base and 6 feet high, centered over tablet, and covered with white cloth.

Station mark: An aluminum tablet cemented in solid rock.

[Latitude 44° 47′ 58.38″. Longitude 120° 25′ 25.96″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Tompkins (H)	63	10	28.81	243	01	37.91	4.2693582	11.553
Maupin Butte 2 (H)	121	03	35.93	300	55	32.43	4.2447190	10.916
Clarno (E)	191	10	56.22	11	13	04.52	4.3125803	12.762
Fossil (E)	227	05	56.55	47	16	16.73	4.4199205	16.341
Rancheria (E)	243	59	14.07	64	11	23.72	4.4024218	15.695
Craggy (E)	252	11	11.57	72	21	03.69	4.28720	12.038
Baldy (E)	293	43	33.68	114	02	22.01	4.5864176	23.977
Pisgah (E)	338	23	10.75	158	31	08.81	4.6111267	25.379
Black Butte (E)	335	49	41.20	155	56	02.89	4.46624	18.180

(H)=positions by Charles Hartmann in 1916; (E)=positions by J. R. Ellis in 1913.

Diamond Peak, Disston, Maiden Peak, McKinzie Bridge, Mount Washington, and Wendling quadrangles.

CROOK, DESCHUTES, LANE, LINN, AND KLAMATH COUNTIES.

During the summer of 1916 J. G. Staack and S. G. Lunde extended triangulation northward through the Cascade National Forest from stations Black and Fairview (see U. S. Coast and Geodetic Survey Special Pub. No. 13) as a base.

In addition to reoccupying two old stations 14 new primary stations were monumented and occupied, 3 secondary stations were occupied, and 18 points were located by intersections.

Positions are given on North American datum.

NOTE: Occupied first.—Juniper, Diamond, Maiden, Irish, Horse, and Scott by J. G. Staack. Hardesty, Cowhorn, Indian, and Buck by S. G. Lunde. Occupied second.—Buckhead, Clark's Butte, and Gray by S. G. Lunde. Occupied in common.—Lookout, Horsepasture, Chucksney, and Huckleberry. Intersected.—Belknap, Black Crater, Deer, North Sister, Middle Sister, Substitute, Paulina, Mule, Waldo, Ray, Odell, and Cowhorn Mountain by J. G. Staack. Heckletooth, Sardine, Castle Rock, and Deathball by S. G. Lunde. Intersected in common.—Squaw and Tid Bits.

BELKNAP, LINN-DESCHUTES COUNTY LINE, OREG. (Not occupied.)

On the summit of Belknap Crater, a bald mountain on the summit of the Cascade Range, about 2 miles north of the McKenzie road where it crosses the divide. It stands in a large lava field and can be ascended from any direction. The nearest feed is at Scott Lake.

Signal: A cairn 4 feet at the base and 5 feet high over the station mark.

Station mark: A bronze tablet set in a boulder sunk in the ground.

[Latitude 44° 17′ 07.5″. Longitude 121° 50′ 28.9″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Horse		187 33 51.3	4.52249	20.69
Horsepasture		226 11 05.3	4.43433	16.89
Lookout		251 11 23.5	4.38525	15.09

BLACK CRATER, DESCHUTES COUNTY, OREG. (Not occupied.)

The summit of Black Crater, a rocky mountain east of the summit of the Cascade Range and 2 miles south of the McKenzie road, where it leaves the summit of the Cascade Range.

Signal and station mark: A cairn 4 feet high.

[Latitude 44° 15′ 59.3″. Longitude 121° 44′ 51.5″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Horsepasture		238 17 37.5	4.50327	19.80
Scott		258 00 12.6	4.13374	8.45
Lookout		259 18 11.5	4.49155	19.27

BUCK, LANE COUNTY, OREG.

On the highest point on Buck Mountain, at the head of Blue River. A wagon road leads from the town of Blue River to the Cinderella mine, 9 miles distant, from where it is 2 miles by an old trail along the ridge in an easterly direction to the station.

Signal: Pole 8 inches at butt and 20 feet long, with crossbars and streamer attached, wedged in crevasse in the rocks, bearing 327° 20′ true azimuth, distance 7.94 feet from station mark.

Station mark: A bronze tablet cemented in bedrock.

Reference marks: A cross in bed rock bears 336° 00′ true azimuth, distance 1.72 feet; a cross in bed rock bears 206° 00′ true azimuth, distance 2.13 feet; a cross in bedrock bears 70° 00′ true azimuth, distance 3.75 feet.

[Latitude 44° 13′ 49.93″. Longitude 122° 18′ 16.45″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Deathball	8 26 03.4		4.04839	6.95
Cowhorn	36 46 09.05	216 37 52.31	4.4237996	16.49
Tid Bits	162 37 57.3		3.63580	2.69
Lookout	276 49 38.36	96 56 58.47	4.1494762	8.77
Horsepasture	306 03 07.06	126 12 12.61	4.3331017	13.38
Castle Rock	319 29 54.0		4.06074	7.15
Indian	350 47 30.70	170 49 37.15	4.4029185	15.71

BUCKHEAD, LANE COUNTY, OREG. (Secondary point occupied.)

Situated on highest point of the south end of Buckhead Mountain, 6 miles northwest of Oakridge, Oreg. The point is used as a U. S. Forest Service lookout station, and there is a Forest Service telephone on tree about 200 feet north. It is reached by trail from Oakridge direct to point.

Signal: Braced pole with crossbars and streamer bears 180° 02′ true azimuth, distance 8.27 feet, from station mark.

Station mark: A round hole 1 inch in diameter and 2.5 inches deep in bedrock.

[Latitude 43° 47′ 37.7″. Longitude 122° 29′ 36.1″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hardesty	92 40 56.8	272 33 42.1	4.14788	8.73
Huckleberry	247 13 25.5	67 20 44.4	4.18628	9.54
Diamond	317 20 24.9	137 34 41.3	4.61398	25.55

CASTLE ROCK, LANE COUNTY, OREG. (Not occupied.)

Situated on the highest point of Castle Rock, a lone, prominent peak on the south side of McKenzie River valley, near the junction of South Fork of McKenzie River with the main river, about 6 miles west of McKenzie Bridge, Oreg. The point is used as a U. S. Forest Service lookout station. A trail leads directly from McKenzie Bridge to point.

Signal: A Forest Service lookout house having a flagpole over its center.

[Latitude 44° 09′ 06.4″. Longitude 122° 12′ 40.3″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Indian		191 57 36.3	4.21939	10.30
Buck		319 29 54.0	4.06075	7.15
Lookout		42 54 14.4	3.98362	5.98
Horsepasture		111 42 08.5	4.02886	6.64

CHUCKSNEY, LANE COUNTY, OREG.

Situated on north end of north main peak of Chucksney Mountain. It is reached by road to South Fork bridge; thence by road down left bank of McKenzie River and up South Fork of same; thence by trail up South Fork 20.5 miles to Frizzell's crossing; thence by trail 5.5 miles to Box Canyon ranger station; thence by trail 2.5 miles to top of Chucksney Mountain, and thence north along ridge 1.25 miles to station. It may also be reached from Oakridge by road and trail to Box Canyon ranger station, 32 miles. Lanes through the timber were cut to other points south, west, and north.

Signal: Quadripod signal of timber with crossbars and streamer centered over station mark.

Station mark: A bronze tablet cemented in solid rock.

Reference marks: Cross cut in large boulder bears 242° 00′ true azimuth, distance 13.75 feet; cross cut in large boulder bears 349° 00′ true azimuth, distance 11.07 feet; cross cut in bedrock bears 175° 00′ true azimuth, distance 12.97 feet.

[Latitude 43° 55′ 39.18″. Longitude 122° 06′ 54.92″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Huckleberry	61 15 25.28	241 07 01.07	4.2678662	11.51
Indian	128 02 04.85	307 56 17.81	4.1504226	8.79
Horsepasture	186 08 05.19	6 09 15.63	4.3241084	13.11
Horse	248 55 01.19	69 04 08.38	4.2747873	11.70
Irish	306 30 07.01	126 35 59.70	4.1503161	8.78

CLARK BUTTE, LANE COUNTY, OREG. (Secondary point occupied.)

Situated on Clark Butte, a peak used as a United States Forest Service lookout point, about 24 miles northeast of Lowell, Oreg. It is 2 miles north of Big Fall Creek and 4 miles by trail from Big Fall Creek ranger station.

Signal: An 18-inch fir tree, the branches cut off to about 10 feet of top, with small crossbars and streamer attached. A Forest Service telephone is attached to tree. The tree is also the station mark. It stands on the south slope about 75 feet from top of the butte.

Reference marks: A 40-penny spike in a 16-inch fir stump bears about N. 20° E., distance 36.6 feet; a 40-penny spike in a 16-inch fir stump is about due west, distance 4.0 feet.

[Latitude 43° 59′ 22.8″. Longitude 122° 34′ 28.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hardesty		199 29 51.2	4.35054	13.93
Cowhorn		46 25 35.7	3.90097	4.95
Sardine		94 36 21.2	4.34803	13.85

COWHORN, LANE COUNTY, OREG.

Situated on highest point of Cowhorn Peak, on ridge between Little Fall and Alder creeks, at head of creeks. It is 25 miles northeast of Lowell, a station on the Natron Branch of the Southern Pacific Railroad, and is reached by wagon road 14 miles to Big Fall Creek ranger station; thence by trail 4 miles to Clark Butte, and thence through timber and brush along ridge 5 miles to station.

There is no horse feed near station, but water can be had in saddle 0.5 mile west.

Signal: A 6-inch tree cut off 10 feet above ground, crossbars and streamer attached. The signal bears 149° 51′ true azimuth, distance 9.50 feet, from station mark.

Station mark: A bronze tablet cemented in bedrock.

[Latitude 44° 02′ 20.67″. Longitude 122° 30′ 09.80″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hardesty	26 32 55.55	206 26 03.23	4.4732040	18.47
Clark Butte	46 25 35.7		3.90097	4.95
Buck	216 37 52.31	36 46 09.05	4.4237996	16.49
Deathball	234 15 51.4		4.24345	10.88
Lookout	236 38 18.85	56 53 54.87	4.5530576	22.20
Indian	280 24 00.13	100 34 22.09	4.3068849	12.60
Sardine	293 42 21.6		4.25436	11.16
Huckleberry	325 00 45.48	145 08 28.72	4.4150582	16.16

COWHORN MOUNTAIN, DOUGLAS AND KLAMATH COUNTY LINE, OREG. (Not occupied.)

A sharp peak, locally known as Cowhorn Mountain, on the summit of the Cascade Range; can be reached from Crescent Lake.

Station mark: A cairn 5 feet high.

[Latitude 43° 24′ 00.6″. Longitude 122° 03′ 11.2″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Maiden		15 58 02.7	4.41901	16.31
Black		231 12 40.5	4.62934	26.50
Diamond		330 01 45.9	4.19079	9.64

DEATHBALL, LANE COUNTY, OREG. (Not occupied.)

Situated on highest point of peak locally known as Deathball, 2 miles south of Blue River, Oreg. Ferry across McKenzie River and follow dim trail leading up to saddle just west of point; thence go along ridge east about 0.25 mile.

Signal: A dead tree trimmed of branches to within 15 feet of top, with crossbars and streamer attached.

[Latitude 44° 07′ 51.6″. Longitude 122° 19′ 30.2″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cowhorn		234 15 51.4	4.24345	10.88
Buck		8 26 03.4	4.04839	6.95
Lookout		59 10 59.2	4.26112	11.34

DEER, LANE COUNTY, OREG. (Not occupied.)

On the summit of Deer Butte, a brushy mountain overlooking Lost Creek valley, and on the north side of McKenzie River about 15 miles from McKenzie Bridge post office. Can be reached by trail from Alder Springs. It is a Forest Service lookout point.

Signal: A trimmed tree with crossbar and streamer.

Station mark: A bronze tablet set in a rock near base of the tree.

[Latitude 44° 10′ 51.7″. Longitude 121° 55′ 55.1″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Horse		172 24 34.8	4.33455	13.42
Horsepasture		239 50 58.0	4.15673	8.91
Lookout		283 30 29.9	4.21024	10.08

DIAMOND, LANE AND KLAMATH COUNTIES, OREG.

Situated on the highest point of Diamond Peak, which is one of the principal peaks of the Cascade Range and stands near the source of Middle Fork of Willamette River. It is best ascended from the south and can be reached from Summit Lake, where a trail leaves the Oregon Central Military Road near the upper end of the lake. There is no feed near its base.

Signal: A cairn with 4-foot base and 5 feet high built of porous lava.

Station mark: A bronze tablet set in porous rock sunk in volcanic ash and pumice.

Reference marks: A cross cut in rock bears 86° true azimuth, distance 17.7 feet; a cross cut in rock bears 356° true azimuth, distance 50 feet.

[Latitude 43° 31′ 16.18″. Longitude 122° 08′ 55.61″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Black	32 35 16.64	212 22 19.28	4.7676784	29.52
Fairview	100 14 52.18	279 54 02.96	4.6162954	25.68
Juniper	107 54 59.45	287 47 45.05	4.1724242	9.24
Squaw	150 05 31.8	329 58 03.0	4.46642	18.19
Huckleberry	159 29 45.86	339 22 46.86	4.5875578	24.04
Waldo	188 32 21.2	... .	4.43883	17.07
Irish	200 56 05.01	21 03 19.76	4.594900	24.45
Ray	206 35 11.9	... .	4.25647	11.23
Maiden	231 38 20.33	51 45 58.90	4.2792421	11.82
Paulina	255 10 20.5	... .	4.87290	46.37
Odell	283 26 10.3	... .	4.37587	14.76
Cowhorn Mountain	330 01 45.9	... .	4.19079	9.64

FAIRVIEW, LANE COUNTY, OREG.

A station of the United States Coast and Geodetic Survey, on the west side of the summit of Fairview Peak, in the Bohemia Mountains, about 25 miles southeast of Cottage Grove, and 6 miles by road from Mineral post office. The station mark is in a boulder. Three reference marks are in rock ledges and at the following distances and azimuths from the station: 6.69 meters, 74° 29′; 2.92 meters, 181° 39′; and about 175 feet, 266° 09′.

Station mark: Copper bolt in boulder beneath bronze tablet.

Reference marks: Copper bolts in rock.

[Latitude 43° 35′ 10.459″. Longitude 122° 39′ 08.622″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Hardesty	176	59	53.81	356	59	15.40	4.3754333	14.75
Huckleberry	222	51	11.49	43	05	05.20	4.5979231	24.619
Squaw	235	00	48.1	...	..	.....	4.50104	19.70
Juniper	275	37	55.74	95	51	30.77	4.4259576	16.569
Diamond	279	54	02.96	100	14	52.18	4.6162954	25.683
Black (C. & G. S.)	341	59	37.72	162	07	24.98	4.6965851	.....
White (C. & G. S.)	31	14	40.80	210	58	49.21	4.7811331	.....
Scott (C. & G. S.)	54	40	43.54	234	23	43.86	4.6116108	.....

C. & G. S.=by U. S. Coast and Geodetic Survey in 1904.

GRAY, LANE COUNTY, OREG.

A secondary point situated on Short Ridge Rock, a United States Forest Service lookout station, on ridge between Gray and Lairson creeks, about 4 miles south of Oakridge, Oreg. It is reached by road from Oakridge 5.3 miles up Middle Fork of Willamette River to Jap Hills ranch, and thence by trail across river and up ridge 5 miles to station.

Station mark: A bronze tablet set in pinnacle of solid rock 10 feet south of and 6 feet below its top.

[Latitude 43° 42′ 43.0″. Longitude 122° 28′ 15.4″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Buckhead	...	..	.....	348	46	50.9	3.96731	5.76
Huckleberry	..	...	.....	39	31	04.3	4.28925	12.09
Squaw	...	..	.....	69	54	37.8	4.08264	7.52
Diamond	...	..	.....	129	18	14.2	4.52568	20.85

HARDESTY, LANE COUNTY, OREG.

Situated on north end of Mount Hardesty, a narrow ridge peak about 5 miles south of Reserve, a station on the Natron Branch of the Southern Pacific Railroad. It is used as a fire-lookout station and is reached by trail from Reserve. Good horse feed is plentiful just north, and water is obtained at a spring on trail about 0.25 mile north of the station.

Signal: A leaning fir tree 60 feet high with a vertical top, trimmed to about 20 feet from top, and having a cloth cross-bar signal about 30 feet from the ground. Top of tree is centered over station mark.

Station mark: A bronze tablet cemented in a large, solidly set boulder.

Reference marks: A solid rock with cross cut in top bears 12° 00′ true azimuth, distance 3.84 feet; a solid rock with cross cut in top bears 240° 00′ true azimuth, distance 2.03 feet; two 8-penny nails driven closely together in blaze on signal tree, bear 199° 00′ true azimuth, distance 0.95 foot.

[Latitude 43° 47′ 58.53″. Longitude 122° 40′ 0.22″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cowhorn	206 26 03.23	26 32 55.55	4.4732040	18.47
Huckleberry	259 15 37.67	79 30 11.50	4.4577525	17.83
Squaw	281 28 28.3	... .	4.44356	17.25
Heckletooth	284 51 35.8	... .	4.39782	15.53
Fairview	356 59 15.40	176 59 53.81	4.3754333	14.75

HECKLETOOTH, LANE COUNTY, OREG. (Not occupied.)

Situated on the highest point of Heckletooth Peak, on the ridge between Salmon and Salt creeks, about 5 miles east of Oakridge. A trail leads from Oakridge, crossing Salmon Creek at the Southern Pacific railroad bridge, leading up to and along the ridge directly to station. The point is used as a United States Forest Service lookout station.

Signal: Flagpole on building used as lookout station.

[Latitude 43° 44′ 29.4″. Longitude 122° 22′ 04.6″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hardesty	.....	284 51 35.8	4.39782	15.53
Huckleberry	.....	19 10 17.6	4.09441	7.72

HORSE, LANE COUNTY, OREG.

On west end of the summit of Horse Mountain, which lies approximately 2 miles west of the Lane and Crook county line, near the head of Horse Creek, a tributary of McKenzie River. Can best be reached from Horse Lake through saddle. There are small patches of feed on the east and west slopes of the mountain and good feed at Horse Lake ranger station, 2 miles northeast.

Signal: A target signal 12 feet high set over the station mark.

Station mark: A bronze tablet set in top of a vertical rock ledge.

Reference marks: A cross cut in rock bears 261° true azimuth, distance 9.7 feet; a cross cut in rock bears 80° true azimuth, distance 22.4 feet.

[Latitude 43° 59′ 17.85″. Longitude 121° 53′ 46.62″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Irish	22 22 50.62	202 19 36.69	4.2148431	10.19
Chucksney	69 04 08.38	248 55 01.19	4.274873	11.70
Horsepasture	132 59 19.94	312 51 22.30	4.3197808	12.98
Lookout	143 35 35.12	323 25 51.36	4.4965762	19.50
Deer	172 24 34.8	.....	4.33455	13.42
Scott	177 04 00.95	357 03 15.79	4.4492175	17.48
Substitute	180 14 11.8	.....	4.14447	8.67
Belknap	187 33 51.3	.....	4.52249	20.69
Middle Sister	206 52 43.6	.....	4.30100	12.43

HORSEPASTURE, LANE COUNTY, OREG.

Situated on the highest point on Horsepasture Mountain, 10 miles southeast of McKenzie Bridge, Oreg. It is reached by road and trail from McKenzie Bridge. Horse feed is plentiful, and water is to be had 0.5 mile south of station.

Signal: Rock cairn 7 feet in diameter at base and 8 feet high, having a trimmed tree in center with white streamer attached, bears 36° 53′ true azimuth, distance 1,121 feet, from station mark.

Station mark: A bronze tablet cemented in bedrock.

Reference marks: Cross cut in bedrock bears 167° 00′ true azimuth, distance 3.98 feet; cross cut in bedrock bears 244° 00′ true azimuth, 3.26 feet; cross cut in bed rock bears 34° 00′ true azimuth, distance 3.43 feet.

[Latitude 44° 06′ 58.61″. Longitude 122° 05′ 13.56″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Chucksney	6	09	15.63	186	08	05.19	4.3241084	13.11
Indian	47	32	43.21	227	25	45.08	4.2589876	11.28
Castle Rock	111	42	08.5				4.02886	6.64
Buck	126	12	12.61	306	03	07.06	4.3331017	13.38
Tid Bits	132	05	08.7				4.40030	15.62
Lookout	162	57	56.38	342	56	10.56	4.0610447	7.15
Scott	224	49	19.42	44	56	32.94	4.2918556	12.17
Belknap	226	11	05.02				4,43433	16.89
Black Crater	238	17	37.5				4.50327	19.80
Deer	239	50	58.0				4.15673	8.91
North Sister	257	27	36.2				4.41221	16.05
Middle Sister	261	26	49.2				4.39061	15.28
Substitute	270	57	30.8				4.18572	9.53
Horse	312	51	22.30	132	59	19.94	4.3197808	12.98

HUCKLEBERRY, LANE COUNTY, OREG.

Situated on highest point of Huckleberry Mountain, 15 miles northeast of Oakridge, Oreg. It is reached by road 6 miles and trail from Oakridge, Oreg., the present terminal of the Natron branch of the Southern Pacific Railroad. From end of the road on High Prairie follow the main Brock Cabin trail 2.5 miles to first trail leading to the right. Scattered grass and a small spring are found on the south side near the top of the ridge about 1 mile east of the station.

Signal: A fir tree with tuft of branches at top, braced by 3 poles; crossbars and streamers are attached, and tree is centered over station mark.

Station mark: A bronze tablet cemented in rock 6 by 8 by 18 inches, which projects 3 inches above ground.

Reference marks: Three 10-penny nails in 7-inch fir stump bear 130° 00′ true azimuth, distance 10.85 feet; three 10-penny nails in 12-inch fir stump bear 53° 00′ true azimuth, distance 15.82 feet; cross cut in large solid rock bears 284° 00′ true azimuth, distance 7.63 feet.

[Latitude 43° 50′ 49.83″. Longitude 122° 19′ 02.25″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Juniper	0	58	21.91	180	58	05.36	4.5005871	19.68
Squaw	5	22	05.8	185	21	35.3	4.03797	6.78
Heckletooth	19	10	17.6				4.09441	7.72
Fairview	43	05	05.20	222	51	11.49	4.5979230	24.62
Buckhead	67	20	44.4	247	13	25.5	4.18628	9.54
Hardesty	79	30	11.50	259	15	37.67	4.4577525	17.83
Cowhorn	145	08	28.72	325	00	45.48	4.4150582	16.16
Sardine	186	20	50.4				4.15128	8.80
Indian	196	01	50.33	16	04	28.11	4.2635914	11.40
Chucksney	241	07	01.07	61	15	25.28	4.2678662	11.51
Irish	268	49	06.54	89	03	22.84	4.4411264	17.16
Waldo	297	06	25.0				4.29726	12.32
Maiden	310	31	16.07	130	45	55.41	4.5741693	23.31
Ray	312	46	33.8				4.47018	18.35
Diamond	339	22	46.86	159	29	45.86	4.5875578	24.039

INDIAN, LANE COUNTY, OREG.

Situated on the highest point on Indian Ridge. There is a point on the ridge of nearly the same height about 1 mile farther north. Station is reached by wagon road from Lowell, 14 miles to Big Fall Creek ranger station; thence by trail 25 miles up Big Fall Creek to Indian Ridge; thence by Indian trail north along ridge 3 miles; or it can be reached by trail from McKenzie Bridge, Oreg., up South Fork of McKenzie River to Hardy's cabin and thence up Indian Ridge trail. There is scattered horse feed along Indian Ridge. No water was found near station.

Signal: A 14-inch hemlock tree, 55 feet high, with 10-foot tuft of branches at top, then trimmed for 10 feet down and streamer attached; then branches left for 10 feet down. The branches were trimmed off the lower 25 feet, and crossbars were attached 20 feet up from the ground. The signal bears 82° 19′ true azimuth, distance 3.55 feet, from station mark.

Station mark: A bronze tablet cemented in rock 8 by 14 by 18 inches, which projects 4 inches above the ground.

Reference marks: A 30-penny spike in 12-inch fir stump bears 247° 00′ true azimuth, distance 10.31 feet; a 30-penny spike in 8-inch hemlock stump bears 13° 00′ true azimuth, distance 2.75 feet.

[Latitude 44° 00′ 21.13″. Longitude 122° 15′ 14.81″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Huckleberry	16	04	28.11	196	01	50.33	4.2635914	11.40
Sardine	44	36	04.5				3.69800	3.10
Cowhorn	100	34	22.09	280	24	00.13	4.3068849	12.60
Buck	170	49	37.15	350	47	30.70	4.4029185	15.71
Castle Rock	191	57	36.3				4.21939	10.40
Lookout	203	11	49.04	23	17	01.83	4.4035759	15.74
Horsepasture	227	25	45.08	47	32	43.21	4.2589876	11.28
Chucksney	307	56	17.81	128	02	04.85	4.1504226	8.79

IRISH, LANE AND DESCHUTES COUNTIES, OREG.

On summit of middle peak of Irish Mountain, a mountain on the divide between North Fork of Middle Fork of Willamette River and Deschutes River. Can best be reached from Irish Lake by a blind trail. Good camp and feed at foot of east side of mountain.

Signal: A target signal 12 feet high set in a rock cairn over the station mark.

Station mark: A bronze tablet set in solid rock on highest crag of the mountain.

Reference marks: Cross cut in rock bears 162° true azimuth, distance 28.9 feet; cross cut in rock bears 293° 30′ true azimuth distance 169 feet.

[Latitude 43° 51′ 06.42″. Longitude 121° 58′ 26.19″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Ray	16	18	02.9				4.33158	13.33
Diamond	21	03	19.76	200	56	05.01	4.5949000	24.45
Waldo	46	16	29.4				4.14096	8.60
Mule	83	19	37.7				4.29979	12.39
Huckleberry	89	03	22.84	268	49	06.54	4.4411264	17.16
Chucksney	126	35	59.70	306	30	07.01	4.1503161	8.78
Horse	202	19	36.69	22	22	50.62	4.2148431	10.19
Paulina	287	01	24.0				4.78324	37.72
Odell	348	01	58.3				4.6357[illegible]	26.86
Malden	358	09	14.77	178	09	39.56	4.3972163	15.51

JUNIPER, LANE COUNTY, OREG.

Situated on the highest bald point on Juniper Ridge, between Middle Fork of Willamette River and Hills Creek, its tributary. Can easily be reached by trail from Rigdon ranger station on the Oregon Central Military Road, 26 miles from Oakridge.

Signal: A target signal 15 feet high set in rock cairn; true azimuth 310° 52′ 45″, distance 8.2 feet from station mark.

Station mark: Bronze tablet set in rock ledge under a rock cairn 3 feet high.

Reference marks: Cross cut in rock ledge bears 149° 30′ true azimuth, distance 13.3 feet; cross cut on rock bears 311° 30′ true azimuth, distance 8.2 feet.

[Latitude 43° 33′ 43.96″. Longitude 122° 19′ 26.20″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Black	14 15 32.58	194 09 47.89	4.6632095	28.61
Fairview	95 51 30.77	275 37 55.74	4.4259576	16.60
Squaw	178 39 51.3	.....	4.31806	12.92
Huckleberry	180 58 05.36	0 58 21.91	4.5005871	19.68
Waldo	218 47 13.5	.....	4.46282	18.04
Maiden	255 54 46.03	76 09 39.60	4.4764409	18.61
Diamond	287 47 45.05	107 54 59.45	4.1724242	9.24

LOOKOUT, LANE COUNTY, OREG.

Situated on the south end of Lookout Mountain, 5 miles northeast of McKenzie Bridge, Oreg. It is reached by following road up the right bank of McKenzie River for about 1 mile; thence along trail northeasterly to top of ridge; thence west and north along ridge by sheep trail to station. Lookout Mountain is forested on the west and north sides. Lookout ranger station site is about 0.5 mile south of point.

Signal: Fir tree trimmed so as to leave an 8-foot tip of branches, fastened in a crotched tree snag with crossbars and streamer attached, bears 143° 29′ true azimuth, distance 4.59 feet, from station mark.

Station mark: A bronze tablet cemented in rock 8 by 10 by 16 inches, which projects 4 inches above ground.

Reference marks: Cross cut in large boulder bears 276° 00′ true azimuth, distance 2.82 feet; drilled hole 1 inch deep and 1 inch in diameter bears 212° 00′ true azimuth, distance 3.62 feet; drilled hole 1 inch deep and 1 inch in diameter bears 136° 00′ true azimuth, distance 2.44 feet.

[Latitude 44° 12′ 55.11″. Longitude 122° 07′ 45.43″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Indian	23 17 01.83	203 11 49.04	4.4035759	15.74
Castle Rock	42 54 14.4	.....	3.98361	5.98
Cowhorn	56 53 54.87	236 38 18.85	4.5530576	22.20
Deathball	59 10 59.2	.....	4.26112	11.34
Buck	96 56 58.48	276 49 38.37	4.1494762	8.77
Belknap	251 11 23.6	.....	4.38525	15.09
Black Crater	259 18 11.5	.....	4.49155	19.27
Scott	260 26 04.57	80 35 04.41	4.2409397	10.82
North Sister	280 39 15.8	.....	4.46378	18.07
Deer	283 30 29.8	.....	4.21024	10.08
Middle Sister	284 50 17.2	.....	4.45695	17.80
Substitute	301 01 09.5	.....	4.33913	13.57
Horse	323 25 51.36	143 35 35.12	4.4965762	19.50

MAIDEN, LANE AND DESCHUTES COUNTIES, OREG.

Situated on the highest part of Maiden Peak, one of the minor peaks on the summit of the Cascade Range, near the common corner of Lane, Klamath, and Deschutes counties. Can be ascended from any side but best by trail from Davis Lake ranger station. There is no feed for stock close to the top.

Signal: A target and flagstaff 15 feet high nailed to the support of U. S. Forest Service lookout station bears 288° 44′ 39″ true azimuth, distance 8.9 feet.

Station mark: A bronze tablet set in a hard boulder sunk flush with the surface of the ground.

Reference mark: A cross chiseled on a rock bears 332° 30′ true azimuth, distance 47.7 feet.

[Latitude 43° 37′ 38.15″. Longitude 121° 57′ 50.33″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cowhorn Mountain	15 58 02.7		4.41901	16.31
Diamond	51 45 58.90	231 38 20.33	4.2792421	11.82
Juniper	76 09 39.60	255 54 46.03	4.4764409	18.61
Ray	122 30 36.1		3.90826	5.03
Huckleberry	130 45 55.41	310 31 16.07	4.5741693	23.31
Waldo	144 55 49.3		4.27408	11.68
Irish	178 09 39.56	358 09 14.77	4.3972163	15.51
Odell	334 48 40.0		4.28256	11.91

MIDDLE SISTER, LANE AND DESCHUTES COUNTIES, OREG. (Not occupied.)

On the summit of Middle Sister, the middle peak of a group of three peaks on the summit of the Cascade Range known as the Three Sisters. A very good outlook to be had from this station

Signal and station mark: A rock cairn.

[Latitude 44° 08′ 55.7″. Longitude 121° 46′ 59.8″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Horse		206 52 43.6	4.30100	12.43
Horsepasture		261 26 49.2	4.39061	15.27
Lookout		284 50 17.1	4.45695	17.80
Scott		314 22 02.9	4.16630	9.11

MULE, LANE COUNTY, OREG. (Not occupied.)

Station mark: A [illegible]med tree on the southern end of Mule Mountain, a flat-topped and timbered mountain on the divide between Salmon Creek and North Fork of Middle Fork of Willamette River.

[Latitude 43° 49′ 50.3″. Longitude 122° 13′ 12.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Irish		83 19 37.7	4.29979	12.39
Huckleberry		283 11 16.7	3.90438	4.99

NORTH SISTER, LANE AND DESCHUTES COUNTIES, OREG. (Not occupied.)

On the summit of North Sister, the northernmost peak of a group of three peaks, known as the Three Sisters, on the summit of the Cascade Range.

Signal and station mark: Highest point on the peak near the south end.

[Latitude 44° 09′ 58.8″. Longitude 121° 46′ 18.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log meters.*	*Miles.*
Horsepasture		257 27 36.2	4.41221	16.05
Lookout		280 39 15.8	4.46378	18.07
Scott		306 05 04.4	4.14915	8.76

ODELL, KLAMATH COUNTY, OREG. (Not occupied.)

A cone-shaped mountain, 9 miles west of Crescent, Oreg., having a sharp, rocky top, locally known as Odell Butte.

Station mark: The highest pointed rock.

[Latitude 43° 28′ 16.0″. Longitude 121° 51′ 47.4″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Diamond		283 26 10.3	4.37587	14.76
Maiden		334 48 40.0	4.28256	11.91
Irish		348 01 58.3	4.63577	26.86

PAULINA, CROOK COUNTY, OREG. (Not occupied.)

The highest part of Paulina Peak, about 12 miles east of Lapine. The summit is a Forest Service lookout and may be reached on horseback from Paulina Lake.

[Latitude 43° 41′ 22.4″. Longitude 121° 15′ 14.4″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Diamond		255 10 20.5	4.87290	46.37
Irish		287 10 24.0	4.78324	37.72

RAY, LANE COUNTY, OREG. (Not occupied.)

On the summit of Mount Ray, a lone mountain at the south end of Waldo Lake.

Station mark: A cross chiseled in a rock, over which a cairn 4 feet high was placed.

[Latitude 43° 39′ 59.0″. Longitude 122° 02′ 55.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Irish		16 18 02.9	4.33158	13.33
Huckleberry		312 46 33.7	4.47018	18.35
Diamond		206 35 11.9	4.25647	11.23
Maiden		122 30 36.1	3.90826	5.03

SARDINE, LANE COUNTY, OREG. (Not occupied.)

Situated on the highest point of Sardine Butte on ridge between Indian Ridge and Sinker Mountain. Sardine Butte is a very sharp and prominent butte. It is reached from Lowell, Oreg., by wagon road 14 miles to Big Fall Creek ranger station, thence over the Indian Ridge trail 23 miles to within 0.5 mile of point, and thence along ridge through timber to station.

Signal: A rock cairn 3.5 feet in height, with 4-foot base, a 20-foot tree, trimmed except tuft at top, standing in center of cairn. Streamer of white cloth attached to tree.

Station mark: A bronze tablet is cemented in solid rock under cairn.

[Latitude 43° 58′ 26.1″. Longitude 122° 17′ 51.9″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Huckleberry	6 21 38.9	186 20 50.4	4.15128	8.80
Cowhorn	113 50 54.4	293 42 21.6	4.25436	11.16
Indian		44 36 04.6	3.69800	3.10

SCOTT, LANE COUNTY, OREG.

On the summit of Scott Mountain, formerly known as Olallie Mountain, which is bald topped and stands 3 miles west of the summit of the Cascade Range where the McKenzie Road crosses the divide. Can be easily reached from the McKenzie Road and Scott Lake.

Signal: A target signal 10 feet high set in a rock cairn over the station mark.

Station mark: A bronze tablet set in a rock sunk in the ground under the cairn.

Reference marks: A cross cut in rock bears 291° 30′ true azimuth, distance 79 feet, a cross cut in rock bears 154° 30′ true azimuth, distance 50.7 feet.

[Latitude 44° 14′ 28.15″. Longitude 121° 54′ 51.49″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Horsepasture	44 56 32.94	224 49 19.42	4.2918556	12.17
Lookout	80 35 04.41	260 26 04.57	4.2409397	10.82
Tid Bits	95 19 32.1		4.51311	20.25
Black Crater	258 00 12.6		4.13374	8.45
North Sister	306 05 04.4		4.14915	8.76
Middle Sister	314 22 02.9		4.16630	9.11
Substitute	353 56 33.7		4.15316	8.84
Horse	357 03 15.79	177 04 00.95	4.4492175	17.48

SQUAW, LANE COUNTY, OREG. (Not occupied.)

Situated on highest point of Squaw Butte, a bald butte about 7 miles east of Oakridge, Oreg. It is reached by a trail which crosses Salmon Creek at Southern Pacific R. R. bridge and leads southeast up on divide between Salmon and Salt creeks. Follow trail along ridge east about 3 miles to point where it leaves ridge. The trail there turns south-southeast toward Mineral Springs. From this point follow top of ridge about 1 mile to station.

Signal: Cross bars and streamer attached to a snag 8 inches in diameter and 12 feet high.

Station mark: A bronze tablet is cemented in a rock about 3 feet south of signal.

[Latitude 43° 44′ 57.8″. Longitude 122° 19′ 47.9″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fairview		235 00 48.1	4.50104	19.70
Hardesty		281 28 28.3	4.44356	17.25
Huckleberry	185 21 35.3	5 22 05.8	4.03797	6.78
Diamond	329 58 03.0	150 05 31.8	4.46642	18.19
Juniper		178 39 51.3	4.31806	12.92

SUBSTITUTE, LANE COUNTY, OREG. (Not occupied.)

On the summit of an unnamed mountain between North Fork of Horse Creek, a tributary of McKenzie River, and Lost Creek and about 3 miles due west of The Husband, a craggy mountain near the head of Lost Creek.

Signal: A target signal set over the station mark.

Station mark: A bronze tablet set in a rock ledge.

[Latitude 44° 06′ 49.07″. Longitude 121° 53′ 44.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Horse		180 14 11.8	4.14447	8.67
Horsepasture		270 57 30.6	4.18572	9.53
Lookout		301 01 09.5	4.33913	13.57
Scott		353 56 33.7	4.15316	8.84

TID BITS, LANE COUNTY, OREG. (Not occupied.)

Situated on top of south peak of Tid Bits Mountain, a mountain with two sharp cliff peaks about 10 miles north from Blue River, Oreg. It is reached by road and trail direct from Blue River.

Signal: Flag pole on center of Forest Service lookout station house.

[Latitude 44° 16′ 03.6″. Longitude 122° 19′ 14.6″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Scott				
Horsepasture		132 05 08.7	4.40030	15.62
Buck		162 37 57.3	3.63580	2.69

WALDO, LANE COUNTY, OREG. (Not occupied.)

On the summit of Waldo Mountain near the head of Salmon Creek. Can be reached from Oakridge by way of the Salmon Creek trail.

Signal: A target signal over the station mark.

Station mark: A cross chiseled in a rock over which is a cairn 4 feet high.

[Latitude 43° 45′ 56.3″. Longitude 122° 05′ 53.2″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Diamond		188 32 21.2	4.43883	17.07
Juniper		218 47 13.5	4.46282	18.04
Huckleberry		297 06 21.3	4.29726	12.32
Irish		46 16 29.4	4.14096	8.60
Maiden		144 55 49.3	4.27408	11.68

Lowell quadrangle.

LANE COUNTY.

During the summer of 1917 George T. Hawkins and L. F. Biggs relocated station Castle Rock and located station Jacoby by intersections by occupying old stations Pisgah and Spencer.

Positions are on North American datum.

CASTLE ROCK, LANE COUNTY, OREG.

About 7.5 miles nearly east from Saginaw and 3 miles northeast of the old Booth-Kelley sawmill. There is no trail. Can go to the mill by road thence through the woods. Partly cleared on top. Lone pine left for signal.

Station mark: Cross and letters "U. S." cut in solid ledge.

[Latitude 43° 50′ 36.524″. Longitude 122° 53′ 27.598″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Harness (G)	26	08	35.2	205	59	37.3	4.5987349	.....
Yellow Creek (G)	51	34	00.4	231	12	47.9	4.7226620	.....
Wards (G)	61	00	54.9	240	49	52.6	4.3889250	.....
Seavies (G)	163	42	47.3	343	38	18.2	4.4875925	.....
Spencer (H)	133	37	13.8	313	28	44.9	4.3538334	14.034
Pisgah (H)	161	54	46.1	341	51	43.0	4.2774224	11.077
Jacoby (H)	191	05	40.1	11	07	12.1	4.1863615	9.544

(G)=by W. T. Griswold, 1895–6; (H)=by G. T. Hawkins in 1917.

JACOBY, LANE COUNTY, OREG. (Not occupied.)

On a partly cleared hill about 1.5 miles southeast from Jacoby railroad station. The highest tree on the hill was trimmed of branches, leaving a small tuft in top. A flag pole was fastened to top of tree with white flag about 15 feet above tree top. Base of tree was blazed, and large nail was driven in center of blaze.

[Latitude 43° 58′ 44.84″. Longitude 122° 51′ 14.99″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Castle Rock	11	07	12.1	191	05	40.1	4.1863615	9.544
Spencer	91	32	14.4	271	22	12.9	4.2858395	12.000
Pisgah	108	23	36.8	288	19	01.3	3.9689770	5.785

SPENCER, LANE COUNTY, OREG. (U. S. C. & G. S. station.)

This station is near a U. S. Geological Survey station. It is on the south end and highest point of the summit of Spencer Butte, about 4 miles south of Eugene, Oreg. Two trees used by the Geological Survey are at the north end of the summit. The station is marked by a ⅜-inch copper bolt 3 inches long cemented into a drill hole in rock, and directly above the bolt in the same drill hole is cemented an old-type station mark, a brass disk 85 millimeters in diameter marked "U. S. C. & G. S."

Four reference marks, drill holes in ⅜-inch copper bolts 3 inches long cemented into drill holes in boulders, are at the following distances and azimuths from the station: 21.04 meters, 197° 31′; 20.70 meters, 107° 02′.

[Latitude 43° 59′ 00.715″. Longitude 123° 05′ 41.248″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Yellow	27	10	28.02	206	57	41.38	4.7362330	33.852
Pisgah	256	49	13.38	76	54	39.61	4.0312723	6.678
Jacoby	271	22	12.9	91	32	14.4	4.2858395	12.000
Castle Rock	313	28	44.9	133	37	13.8	4.3538334	14.034
Fairview	320	57	05.87	141	15	27.90	4.7537056	35.242

PISGAH, LANE COUNTY, OREG.

Situated north and east from Goshen on a hill known as Mount Pisgah, about 200 feet southwest or toward Spencer Butte from the highest point of the hill. The station is on top of a rock about 4 by 6 feet in area, which projects 16 inches above ground. This rock is the largest one of a cluster and except one on the west slope about 175 feet to the north is the largest rock in the vicinity.

Station mark: A 0.5-inch drill hole 1.25 inches deep 6 inches from west edge of the rock and 23 inches from the south point.

[Latitude 44° 00′ 19.836″. Longitude 122° 57′ 51.568″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Spencer	76	54	39.61	256	49	13.38	4.0312723	6.678
Willamette South Base	111	24	00.79	291	14	40.27	4.2849731	11.976
Seavies 2	164	45	06.65	344	43	30.67	4.0671380	7.253
Jacoby	288	19	01.3	108	23	36.8	3.9689770	5.785
Castle Rock	341	51	43.0	161	54	46.1	4.2774224	11.770

PRIMARY TRAVERSE.

Alsea No. 2, Alsea No. 3, Alsea No. 4, Black Butte, Cape Foulweather, Coos Bay, Cottagegrove, Elmira, Eugene, Glenada, Heceta, Head, Mound, Roseburg No. 1, Roseburg No. 2, Scottsburg No. 1, Scottsburg No. 2, Scottsburg No. 3, Scottsburg No. 4, Waldport, and Yoncalla quadrangles.

LANE COUNTY.

The following geographic positions on North American datum were determined in 1917 by George T. Hawkins, J. C. Fales, and F. J. McMaugh as indicated at head of the several quadrangle lists.

They are based on triangulation and traverse positions previously established in this locality.

ALSEA NO. 2 QUADRANGLE.

Northwest along highways. (By J. C. Fales in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Middle of large wooden gate, on south side of road, opposite yellow house of W. M. Summers	44	15	12.3	123	46	06.8	
On west side of road, in sandstone ledge; tablet stamped "Prim. Trav. Sta. No. 105, 1917"	44	16	00.4	123	46	37.8	5,369
West end of plank bridge 20 by 12 feet, without railing	41	16	27.0	123	47	07.0	3,431
Road fork westerly, distance sign "Ocean View 22 miles" at northwest corner	44	16	26.8	123	47	31.5	1,784
East end of bridge 30 by 14 feet, railing on south side only	44	16	55.7	123	47	59.8	3,577
Road fork, old road runs over hill to north of new road	44	16	52.4	123	48	35.2	2,594
Road opposite three-bar gate at end of fence on south side of road	44	16	50.5	123	49	11.0	2,611
Southwest corner of plank and log bridge 30 by 14 feet, railed on both sides	44	17	27.1	123	49	49.9	4,669
T road south over covered bridge, 10 feet north of north end of bridge	44	17	32.9	123	50	24.4	2,575
Road opposite center line of T road south over bridge	44	17	53.1	123	50	37.3	2,254
Road opposite wooden gate at entrance to unpainted abandoned house, 400 feet north of road	44	18	21.6	123	50	41.2	2,892
West end of bridge 20 by 14 feet, 200 feet southeast of old house	44	18	38.0	123	51	21.5	3,364
Center line at south end of timber-truss bridge across creek	44	19	00.0	123	51	30.3	2,321
South end of timber-truss bridge about 800 feet east of Seit's house	44	19	13.3	123	50	46.9	3,430
North edge of road, opposite front door of cottage of M. L. Earnest	44	19	45.5	123	50	44.3	3,261
Road opposite gate at entrance to unpainted shack of W. E. Churchill	44	20	01.9	123	50	12.6	2,844
T road near north end of covered bridge, center line 15 feet north of north end	44	20	17.5	123	49	33.0	3,284
Center of gate in rail fence at entrance to barnyard of C. B. Fleece	44	20	23.8	123	49	16.4	1,362
Road fork east up short incline	44	20	41.3	123	49	13.9	1,785
Road, opposite large door of barn 40 feet west of road	44	20	50.2	123	49	28.1	1,372
West edge of road, opposite middle of woodshed of log dwelling on west side of road	44	21	15.4	123	48	44.0	4,098
T road at west end of covered bridge, junction of road from Danzer and Alsea-Newport road	44	21	36.4	123	49	41.7	4,700
In rock, 30 feet west of road; tablet stamped "Prim. Trav. Sta. No. 108, 1917"	44	21	24.6	123	49	55.4	1,552
Bar gate, 30 feet east of corner of rail fence, on east side of road	44	21	07.2	123	50	04.7	1,894
South junction of old road with new	44	21	19.7	123	50	22.4	1,805
Road, opposite triangular blaze on twin maple tree 40 feet west of road	44	21	39.2	123	50	11.9	2,118
Center of double wagon gate diagonally across road from unpainted shack	44	22	31.1	123	49	59.4	5,333
Road, opposite small picket gate in front of residence of Howell Thistle	44	23	21.7	123	50	26.1	5,480
Road fork southeast	44	23	36.9	123	49	45.7	3,310
West end of covered bridge over Scott Creek	44	24	02.7	123	49	53.5	2,675
South edge of road, opposite double sliding door of barn 10 feet south of road	44	24	00.8	123	50	59.6	4,806
Road, opposite small gate at front entrance to G. N. Barclay's house	44	24	09.4	123	52	22.3	6,066
Northwest corner of fish hatchery	44	24	15.1	123	52	34.4	1,057
Road, opposite stable door of barn 30 feet south of road	44	24	28.8	123	53	29.3	4,216
Tidewater, road opposite rotary saw of Luderman and McMillan's sawmill, which is 50 feet south of road	44	24	41.8	123	54	02.6	2,751
Road, opposite small gate in picket fence at entrance to yellow house of J. H. Early	44	24	39.8	123	54	43.2	2,960
Road, opposite broad wagon gate at corner of garden patch, 300 feet southeast of unpainted house	44	23	56.8	123	55	31.3	5,575
Road, opposite west end of cribbed log retaining wall on north side of road	44	23	52.0	123	56	27.4	4,106
Extreme end of northeast log wing wall of 25 by 18 feet timber bridge without railing	44	24	21.9	123	56	58.6	3,783
Road, opposite triangular blaze on 36-inch hemlock tree at south edge of road	44	24	38.6	123	57	45.5	3,800
West end of three-bar gate in barbed wire fence on north side of road	44	24	40.2	123	59	03.0	5,632
Road opposite small picket gate in board fence, at entrance to red house south of road	44	24	46.1	123	59	30.3	2,067

Magnetic declination for northwest part of quadrangle, 21.5° E.

ALSEA NO. 2 QUADRANGLE—Continued.

East near south border of quadrangle. (By J. C. Fales in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road, opposite log with railing used as foot bridge	44	17	43.2	123	59	52.5	.....
North bank of river, set in rock, U. S. G. S. aluminum tablet stamped "Prim. Trav. Sta. No. 112, 1917"	44	17	54.4	123	59	32.5	1,846
Road, at T road and board gate in wire fence to house of Guy Hayes	44	17	58.6	133	59	14.9	1,349
Timber-truss bridge across river, north end of center line of	44	17	51.9	123	58	33.6	3,076
Road, opposite picket gate at entrance to unpainted small house 50 feet south of road	44	17	34.3	123	58	53.3	2,283
Point in fence line at picket foot gate at entrance to unpainted house 30 feet south of road	44	16	53.7	123	58	20.8	4,745
Timber-truss bridge across river, south end of center line	44	16	57.7	123	57	51.1	2,196
Timber-truss bridge across river, southeast corner of	44	17	02.5	123	57	31.2	1,528
Timber-truss bridge across river, west end of center line	44	17	03.0	123	57	18.0	962
Point in north and south rail fence with double posts 45 feet south of T with fence on south side of road	44	17	13.7	123	56	24.8	4,013
Opposite small picket gate in wire fence at entrance to house of Silas Howell	44	17	03.3	123	56	13.7	1,320
East edge of road at lowest switchback turn	44	16	55.7	123	55	47.0	2,089
Road, opposite triangular blaze on 30-inch spruce tree 10 feet north of road	44	17	20.3	123	55	47.7	2,497
Road, opposite triangular blaze on 24-inch fir tree at west edge of road	44	17	40.0	123	54	59.0	4,061
Road, opposite triangular blaze on 30-inch fir tree at west edge of road	44	17	55.7	123	54	17.7	3,401
Road, opposite triangular blaze on 24-inch fir tree at west edge of road	44	17	43.4	123	53	46.4	2,598
Road, opposite 15-inch fir tree at west edge of road	44	17	58.8	123	53	03.4	3,495
Road, opposite board wagon gate in rail fence on north side of road	44	17	50.7	123	52	36.2	2,137
Point in barbed-wire fence 20 feet north of fence corner, 60 feet north of road	44	18	15.3	123	51	57.6	3,759

Magnetic declination for south border of quadrangle, 21.5° E.

ALSEA NO. 3 QUADRANGLE.

Southwest along Southern Pacific R. R. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Rainrock station, north rail opposite	44	04	34.9	123	51	47.1	6,343
Road crossing	44	04	01.7	123	52	47.8	5,564
East end of bridge 702J	44	03	24.2	123	53	18.0	4,388
Road crossing	44	02	35.4	123	52	34.9	5,860
Road crossing	44	02	15.5	123	51	50.6	3,815
Mapleton, 380 feet south of railroad station, 123 feet northeast of track, 50 feet northwest of brown house, 8 feet southeast of plank walk, 12 feet southwest of telephone pole; iron post stamped "Prim. Trav. Sta. No. 8, Elev. 16, 1917"	44	01	49.4	123	51	26.7	3,161
Center of track at road crossing	44	01	23.1	123	51	28.5	2,670
Road crossing	44	01	08.8	123	52	02.2	2,853
East end of bridge 706K	44	01	23.7	123	52	38.2	3,034
Road crossing	44	01	27.9	123	53	42.1	4,685
Beck siding, intersection of tracks, 100 feet east of switch	44	00	57.9	123	56	08.4	11,117

ALSEA NO. 3 QUADRANGLE—Continued.

Along Southern Pacific R. R.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Nekoma, opposite west end of station, center of track	44	02	48.5	123	45	09.6	.....
Siuslaw River, south end of bridge 5, 432 feet long	44	03	00.5	123	45	47.6	3,027
Bridge 694G	44	02	56.0	123	46	33.7	3,400
Road crossing	44	03	12.9	123	46	48.2	2,008
Center of track at road crossing 696B	44	03	23.3	123	47	36.3	3,665
Swisshome, 120 feet south of railroad track, in northwest corner of yard of section house; iron post stamped "Prim. Trav. Sta. No. 7, 1917"	44	03	24.5	123	48	04.8	2,086
Crossroad	44	03	38.7	123	49	27.9	6,233
Crossroad	44	03	56.1	123	49	50.1	2,395
Cleveland Creek, east end of bridge over	44	04	10.2	123	50	27.2	3,066
Road crossing	44	00	59.6	123	56	27.5	1,402
East end of bridge 711E	44	01	14.0	123	57	56.8	6,689
Betzen, center of track opposite sign	44	01	07.4	123	58	43.9	3,510
East end of bridge 712G	44	01	00.0	123	59	15.0	2,392

Magnetic declination near south border of quadrangle, 21.7° E.

North along highways near east border of quadrangle. (By J. C. Fales in 1917.)

Swisshome, Prim. Trav. Sta. No. 7, McM	44	03	24.6	123	48	04.8	.....
West side of road opposite sign on 18-inch alder tree at east side of road, "Lake Creek Route, Eugene, 43 miles"	44	03	27.8	123	47	39.8	1,855
Road opposite north end of pole stable with slate roof partly destroyed	44	04	10.9	123	47	22.1	4,554
North end of plank bridge 10 by 12 feet, without railing	44	04	44.0	123	47	51.6	3,420
Southeast corner of covered bridge	44	04	53.3	123	47	21.6	1,193
Fork whence new road leaves old road and runs parallel to it, west junction	44	05	11.6	123	46	27.4	4,366
Road, opposite gate at entrance to house of Siuslaw Fish Hatchery, district 42	44	05	38.2	123	46	26.7	2,699
East end of covered bridge	44	05	44.7	123	45	32.3	4,025
T road at Deadwood where Deadwood road leaves Lake Creek road	44	05	43.2	123	45	18.2	1,037
T road, second-class road leading to house of E. H. Berkshire	44	06	14.1	123	45	01.4	3,359
East end of corduroy bridge 150 feet long, with railing on south side	44	06	30.5	123	45	07.8	1,724
South end of wagon bridge 40 by 14 feet, without railing	44	07	04.1	123	45	04.6	3,418
Road, opposite small gate in picket fence at entrance to two-story white house with blue trimmings	44	07	40.7	123	45	16.4	3,798
Road, opposite triangular blaze on 18-inch fir tree at lower edge of road	44	13	25.9	123	45	29.3	.....
Summit of hill	44	13	38.7	123	45	34.0	1,339
Gate across road, hung from 22-inch fir tree at east edge of road	44	14	01.1	123	45	35.8	2,267
Fork in road whence second-class road leads to house approximately 1,000 feet south	44	14	36.3	123	46	12.3	4,727

Magnetic declination for east border of quadrangle, 21.5° E.

Checked spur line along highways north near center of quadrangle. (By F. J. McMaugh in 1917.)

Rainrock station, north rail opposite	44	04	34.9	123	51	47.1	.....
Center of bridge	44	05	05.0	123	52	09.1	3,428
Rainrock station, north rail opposite	44	04	34.9	123	51	47.1	.....
North end of small bridge	44	05	16.4	123	52	23.7	4,981
South end of small bridge	44	05	20.4	123	52	28.5	530
North end of small bridge	44	05	28.1	123	52	25.9	808
Summit of road, tree blazed with large triangle	44	06	03.9	123	51	30.3	5,436
Rainrock, 3.90 miles north of, 80 feet southeast of ranch house occupied by Mr. Vickery, 60 feet west of road, 8 feet north of gate, 2 feet west of fence, in rock; bronze tablet stamped "Prim. Trav. Sta. No. 21, 1917"	44	06	27.2	123	51	07.8	2,881
East end of bridge	44	06	44.4	123	50	58.2	1,869
Large tree with two projecting snags, marked with large triangle blaze	44	07	24.6	123	50	41.0	4,259
Intersecting trail uphill to Mr. Nick Saul's house; hub	44	07	32.3	123	50	24.5	1,437
North end of covered bridge	44	08	04.5	123	50	38.3	.....
North end of small bridge	44	08	19.2	123	50	27.2	1,757
North end of small bridge	44	08	44.6	123	50	14.3	2,730
Center of road opposite Gibson's mail box	44	09	02.0	123	49	56.5	2,192
Telephone pole with triangle blaze, 70 feet south of gateway	44	09	25.2	123	50	11.8	2,607

ALSEA NO. 3 QUADRANGLE—Continued.

Checked spur line along highways north near center of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Blazed tree	44	09	39.4	123	50	28.0	1,853
West gatepost at road leading into Reed post office	44	10	22.7	123	50	12.4	4,524
Reed post office, 0.84 mile north of, 74 feet northeast of schoolhouse, 110 feet southeast of northwest end of bridge, in large boulder; bronze tablet stamped "Prim. Trav. Sta. No. 22, 1917"	44	10	44.0	123	50	52.2	3,055
Fork in roads to north and northwest	44	11	01.5	123	50	57.9	2,119
Corner of sections 11, 12, 13, and 14	44	11	10.4	123	50	52.5	983
North end of bridge	44	12	05.4	123	50	47.7	5,581
Gate across road	44	12	27.3	123	50	40.4	2,302
West end of bridge near sawmill	44	12	41.9	123	50	52.7	1,730
West end of bridge	44	12	37.6	123	51	06.1	1,076
Gateway across road	44	12	36.9	123	51	24.8	1,060
Reed post office, 4.50 miles north of, 60 feet east of Mr. Brazee's house, 12 feet south of trail, 2 feet west of north gatepost at barway inside of fence, in rock in place; bronze tablet stamped "Prim. Trav. Sta. No. 23, 1917"	44	12	44.6	123	51	49.0	1,913

Magnetic declination for center of quadrangle, 20° 33′ E.

ALSEA NO. 4 QUADRANGLE.

West along Southern Pacific R. R. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Road crossing	44	01	42.4	123	30	56.4	
East end of trestle 673F	44	02	04.1	123	32	24.5	6,806
Cram station, north end of bridge near	44	02	12.5	123	32	44.2	1,672
Walton, 276 feet west of railroad station, 55 feet north of main track in southeast corner of section-house yard; iron post stamped "Prim. Trav. Sta. No. 4, 1917, Elev. 404 ft."	44	01	48.5	123	35	03.4	10,454
Shann flag station	44	01	49.7	123	35	48.5	3,301
West rail at north end of bridge 677	44	01	21.2	123	36	25.1	3,933
North end of bridge over Wild Cat Creek	44	01	09.8	123	36	31.3	1,235
Road crossing at schoolhouse	44	00	35.8	123	36	12.0	3,725
East end of tunnel 14	44	00	00.6	123	38	13.5	
North end of bridge 7 over Wild Cat Creek	44	00	12.6	123	38	28.8	1,651
East end of Siuslaw River bridge No. 1	44	00	10.2	123	39	16.8	3,516
East end of bridge 682E	44	00	33.1	123	39	42.1	2,963
Kirbros flag station, 310 feet west of west end of Siuslaw River bridge No. 2, 51 feet south of track at east end of siding, 2 feet north of rail and barbed wire fence; iron post stamped "Prim. Trav. Sta. No. 5, 1917"	44	00	07.9	123	40	09.9	3,257
Richardson, milepost 685a, near road crossing	44	00	08.6	123	41	51.9	7,459
Road crossing, 350 feet northwest of schoolhouse	44	00	59.4	123	42	25.7	5,704
Southwest end of bridge	44	01	25.5	123	41	39.6	4,285
North end of bridge 687J	44	01	32.2	123	40	41.2	4,317
Signpost "Beecher 1 mile"	44	02	02.3	123	40	30.1	3,155
East end of bridge	44	02	31.1	123	40	48.1	3,202
Beecher station, south rail opposite	44	02	32.3	123	41	13.9	1,886
South end of bridge 689H	44	02	51.3	123	41	13.0	1,922
East end of bridge 690D, No. 3 Siuslaw	44	03	21.6	123	41	51.8	4,178
Crossroads	44	03	17.9	123	43	02.3	5,161
Road crossing 692F	44	03	08.4	123	43	51.1	3,691
Nekoma, 1.00 mile northeast of, in southwest corner of yard at Wise Villa, 50 feet north of track; iron post stamped "Prim. Trav. Sta. No. 6, 1917"	44	03	06.5	123	44	04.0	962
Center of track at road crossing	44	03	00.8	123	44	32.9	2,186
Road fork	44	00	01.5	123	39	23.9	
East end of Siuslaw bridge No. 1	44	00	10.2	123	39	16.8	1,022

Magnetic declination for quadrangle 21.7° E.

ALSEA NO. 4 QUADRANGLE—Continued.

North along highways near west border of quadrangle. (By J. C. Fales in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
East end of plank bridge 100 feet long railing on north side only	44	07	47.0	123	44	31.0	.....
Southeast corner of A. Finseth's auto shelter	44	07	58.9	123	44	15.1	1,666
200 feet east of covered bridge, in rock at north edge of road; tablet marked "Prim. Trav. Sta. No. 104, 1917"	44	08	10.9	123	43	45.6	2,473
Road, opposite wooden wagon gate at entrance to house of F. W. Taylor	44	08	36.2	123	43	38.4	2,619
West end of bridge across Deadwood Creek	44	08	41.8	123	43	14.0	1,857
Opposite and 15 feet across road from wooden mail box and sign "Five Rivers 13 miles"	44	08	55.5	123	43	09.6	1,427
Opposite and 10 feet east of southeast corner of rail and log bridge with railing on both sides	44	09	26.6	123	42	53.4	3,370
Northeast corner of new timber bridge 40 by 14 feet, railing on both sides	44	09	39.7	123	42	22.4	2,616
South end of plank bridge 20 by 16 feet, no railing	44	10	03.6	123	42	09.1	2,605
Road, opposite gate on west side of road whence path leads west along small creek	44	10	24.4	123	42	15.2	2,153
Road, opposite small gate at entrance to unpainted house 50 feet south of road	44	11	03.9	123	42	23.9	4,052
Road fork and right angle whence road leads east to unpainted house of Leonard Brooks, white schoolhouse with red roof is 100 feet southwest of fork	44	11	41.6	123	42	34.0	3,884
East end of plank bridge 18 by 14 feet	44	12	18.0	123	43	03.4	4,264
East end of log and plank bridge 30 by 16 feet	44	12	17.2	123	43	55.1	3,771
Road, opposite south face of unpainted abandoned dwelling	44	12	07.0	123	44	40.0	3,428

Magnetic declination for west border of quadrangle, 21.7° E.

BLACK BUTTE QUADRANGLE.

Southwest along Southern Pacific R. R. and northwest along highways in northwest corner of quadrangle. (By G. T. Hawkins in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Comstock station, main line opposite	43	44	22.4	123	11	08.1	.....
Comstock station, 0.25 mile south of, on fence line east of railroad; iron post stamped "Prim. Trav. Sta. No. 4, 1917"	43	44	15.2	123	11	23.0	1,310
Crossing of Pacific Highway, 20 feet southeast of crossing sign	43	43	52.0	123	12	03.1	3,769
Curtin station, road crossing	43	43	19.3	123	12	37.3	4,153
Junction with line to Oakland	43	42	39.9	123	13	08.2	4,590
Three corners, 30 feet east of sign "Lorane 6 miles"	43	42	58.5	123	13	12.1	1,908
North end of wooden bridge, 50 feet southwest of, unpainted two-story house and sawmill	43	43	35.3	123	13	28.5	3,916
Highway bridge 16 feet wide and 60 feet long	43	43	55.1	123	13	29.7	2,014
Road, opposite unpainted two-story house	43	44	11.2	123	13	29.7	1,624
Anlauf, station at	43	42	35.2	123	13	13.8	.....
Anlauf, crossing	43	42	33.8	123	13	16.0	210
Opposite milepost 614	43	42	12.8	123	14	26.5	5,605
Safley, 300 feet north of second-class road crossing, north end of siding	43	42	06.4	123	14	55.6	2,233
Northeast along highways.							
Road fork into brown house, on east side of road	43	30	19.1	123	12	40.4	.....
Center line plank wagon bridge 10 feet long	43	31	35.4	123	12	42.5	7,725
Wooden gate in board fence closing second-class road from main road	43	31	57.3	123	11	57.0	4,079
Point 20 feet in front of yard gate to house, barn across road, house on north side of mountain	43	32	16.2	123	11	17.4	3,429
Shoestring, road opposite north end of school	43	32	24.4	123	11	03.6	1,315
Shoestring, 0.25 mile north of, in middle of ledge on west side of road; tablet stamped "Prim. Trav. Sta. No. 10"	43	32	34.5	123	10	54.8	1,206
T road west, 100 feet northwest of unpainted barn, 80 feet west of green and white house	43	33	05.6	123	10	22.8	3,935
Road, opposite white church, a white schoolhouse is about 275 feet S. 35° W.	43	33	55.7	123	09	41.4	5,913
House owned and occupied by H. Witte, 10 feet south and 20 feet east of road opposite; iron post stamped "955 24 1917"	43	34	25.3	123	09	18.4	3,440

BLACK BUTTE QUADRANGLE—Continued.

Northeast along highways—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center line of road opposite and 90 feet east of schoolhouse	43	34	51.2	123	09	04.6	2,818
Center line of road opposite and 50 feet west of white residence of O. Thornton	43	35	42.4	123	08	48.1	5,324
T road west	43	36	14.8	123	08	53.9	3,307
Road, opposite telephone pole 35/12/A	43	36	41.0	123	08	06.3	4,389
Road forks, 20 feet west of stump	43	36	49.3	123	07	54.0	1,239
London, south of, on top of ridge, on southeast side of road, 6 feet from milepost 36; iron post stamped "1766 23 1917"	43	37	00.1	123	07	27.8	2,209
Road, opposite telephone pole 36/11, which stands 30 feet west of line	43	37	10.8	123	07	15.6	1,411
Road, opposite old house	43	37	23.9	123	07	12.3	1,340
Fence corner at southeast corner of a residence yard, hub in northwest corner of road	43	37	59.2	123	05	32.4	8,171
London, concrete wall to yard of Emerson Keithly, 13 feet from southeast corner of porch, 60 feet from corner of store; tablet stamped "Prim. Trav. Sta. No. 11"	43	38	05.0	123	05	26.3	739
Road, opposite telephone 40/10/A	43	39	34.6	123	04	44.5	9,583
Plank wagon bridge 10 by 16 feet, water trough 20 feet east of line, telephone pole 40/24 15 feet west of line	43	39	52.8	123	04	35.0	1,963
Road, opposite and 40 feet west of residence of C. E. Gilman	43	40	43.2	123	04	10.7	5,413
Grange Hall, 600 feet north of, on east edge of road, opposite T road west to covered bridge; iron post stamped "Prim. Trav. Sta. No. 21, Elev. 792, 1917"	43	41	28.4	123	04	01.5	4,616
Point in turn where road forks north, wooden mail box of J. Kebelbeck is 15 feet east	43	42	27.0	123	03	40.9	6,121
Middle of new covered bridge 190 feet long, about 100 paces southeast of white schoolhouse	43	42	52.3	123	03	10.2	3,413
Three corners at two mail boxes, 200 feet southwest of red bungalow	43	43	25.8	123	03	19.0	3,454
Opposite gate to house of J. Green	43	44	22.0	123	03	22.6	5,695

Magnetic declination for northeast part of quadrangle, 20.5° E.; for north part of quadrangle, 21.8° E.

Checked spur east from London and return. (By G. T. Hawkins in 1917.)

London, 20 feet north of fence corner at southeast corner of residence yard, northwest corner of road; hub	43	37	59.2	123	05	32.4	.....
35 feet west of two mail boxes belonging to George Sutherland and W. T. Jones, 20 feet northwest of woven-wire fence gate 20 feet southwest of fence T	43	37	14.1	123	05	16.6	4,709
Northeast end of covered bridge	43	37	03.5	123	05	03.9	1,424
Wooden mail box marked A. L. Lent, 45 feet north of north end of foot bridge	43	36	28.4	123	04	45.0	3,812
Point in road fork opposite 4 mail boxes, one marked R. B. Sarman, covered bridge 300 feet south	43	35	49.1	123	04	05.5	4,930
200 feet south of residence of M. W. Witte	43	35	39.5	123	03	02.3	4,753
Point 50 feet west of where road forks to house 0.25 mile east of road	43	35	40.5	123	01	59.2	4,638
Cross mark on a rock 4 by 2.5 feet by 2 feet lying on south side of trail and 100 feet west of dam	43	35	07.8	123	00	49.1	6,130
Point in road fork 60 feet west to bridge	43	35	39.7	123	02	14.4	7,061
Nail in burnt log	43	35	48.7	123	03	57.3	7,624
Point in road fork; second-class road runs over wagon bridge 50 feet southwest	43	36	32.7	123	04	51.1	5,958
London, 60 feet from corner of store, in concrete wall to yard of Emerson Keithly, 13 feet from southeast corner of porch; tablet stamped "Prim. Trav. Sta. No. 11"	43	38	05.0	123	05	26.3	9,698

Magnetic declination for quadrangle, 20.8° E.

CAPE FOULWEATHER QUADRANGLE.

North along highways near east border of quadrangle. (By J. C. Fales in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Fork at south junction of winter road and summer road	44	30	02.4	124	04	49.9	.....
Seal Rock, south of, 80 feet east of point where hill road runs on to beach, in gore whence a separate plank road runs east and southeast	44	30	33.4	124	04	46.8	3,149
Opposite and 140 feet west of point of bluff on south side of inlet at Beaver Creek	44	31	18.1	124	04	33.5	4,632
Hub on clay point at south end of ridge; a small knob with grass on west face lies 75 feet north of hub	44	31	53.0	124	04	28.2	3,551
Center of fresh water creek across beach, 105 feet west of where creek emerges from gravel bar	44	33	17.1	124	04	18.8	8,543
Opposite and 81 feet west of south end of a road which runs north from the beach up the bluff	44	34	22.2	124	04	09.7	6,625
Life triangulation station of U. S. C. & G. S., 100 feet from old lookout cabin on edge of bluff, 2.5 miles south of Newport (U. S. C. & G. S. Special Pub. No. 31)	44	35	17.47	124	03	58.23	5,662

Magnetic declination for east border of quadrangle, 21.5° E.

COOS BAY QUADRANGLE.

South along Southern Pacific R. R. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Hauser, 60 feet north of railroad station, on east side of right of way, 90 feet east of main track, 15 feet west of timber; iron post stamped "Prim. Trav. Sta. No. 15, 1917"	43	29	34.4	124	13	21.2	.....
North end of bridge 761B	43	27	38.6	124	13	47.0	11,875
Coos, north end of siding	43	26	41.4	124	14	03.2	5,917
North end of steel bridge across Coos Bay	43	25	51.1	124	14	09.3	5,103
North end of approach to north end of drawbridge over Coos Bay	43	25	29.6	124	14	04.1	2,208
Overhead wagon-road bridge	43	24	57.4	124	13	21.3	4,544
North Bend, center of station	43	24	24.3	124	13	15.9	3,375
Sign post, North Bend city limits	43	23	17.4	124	13	11.9	6,781
Marshfield city limits on south, 8 feet south of bridge 767C	43	23	04.3	124	13	11.2	1,327
Marshfield Hill triangulation station of the U. S. Coast and Geodetic Survey, on brow of hill just back of Marshfield, about 230 feet above bay, about 45 meters north of Nashburg's house. Station mark: A ½-inch copper bolt set in a stone buried 3 feet below surface; directly above this is a standard disk station mark set in a stone. Reference marks are ½-inch copper bolts driven in large stumps, one distant 15.22 meters in azimuth 150° 16′ 45″ and the other distant 4.68 meters in azimuth 264° 23′ 17″	43	22	25.59	124	12	51.69	4,172
Marshfield, at Commercial Avenue, West and Front Streets, in north face of Eldorado Building, 2 feet west of northeast corner and 2.5 feet above sidewalk; bronze tablet stamped "Prim. Sta. No. 16, 1917"	43	22	08.4	124	12	41.5	1,892

COTTAGEGROVE QUADRANGLE.

South along Southern Pacific R. R. (By G. T. Hawkins in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	43	59	11.6	123	00	37.8	.....
Road crossing, 20 feet west of crossing sign	43	58	18.8	123	00	41.3	5,350
Second-class east and west crossing	43	58	06.4	123	00	44.4	1,278
North side of abandoned east and west road, 8 feet west of railroad; iron post stamped "Prim. Trav. Sta. No. 1, 1917"	43	57	56.9	123	00	45.6	960
Second-class road crossing, 20 feet east of bridge	43	56	48.3	123	00	53.2	6,970
Second-class road crossing, 30 feet west to gate, 30 feet east to gate, 100 feet southeast to red barn	43	55	52.9	123	00	59.5	5,630
Creswell, crossing at south end of station	43	55	05.9	123	01	04.2	4,769
Crossing of Pacific Highway	43	54	43.7	123	01	04.9	2,240
Crossing of east and west road	43	54	25.6	123	01	05.4	1,840
Crossing of Pacific Highway	43	53	55.9	123	01	06.3	3,000

COTTAGEGROVE QUADRANGLE—Continued.

South along Southern Pacific R. R.—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
East and west crossing, 400 feet east to house on east side of highway	43	53	11.5	123	01	16.8	4,563
Halfway between Creswell and Walker, on fence line, east of railroad; iron post stamped "Prim. Trav. Sta. No. 2, 1917"	43	52	47.3	123	01	29.2	2,607
Crossing east and west, 150 feet southeast to section post 23	43	52	36.3	123	01	35.4	1,200
Walker, north end of siding	43	51	38.1	123	02	06.4	6,320
Walker, crossing of Pacific Highway	43	50	59.9	123	02	26.8	4,140
Crossing at milepost 630	43	50	39.7	123	02	49.9	2,654
Saginaw, 0.25 mile north of, crossing of Pacific Highway	43	50	08.8	123	02	41.0	3,191
Saginaw, station at	43	49	55.9	123	02	38.4	1,320
Crossing of Pacific Highway	43	49	30.9	123	02	39.4	2,526
Crossing of Pacific Highway, 30 feet southwest to crossing bell	43	48	51.5	123	02	41.9	3,987
North end of bridge 400 feet long	43	48	32.8	123	02	55.9	2,159
Cottage Grove, road crossing at	43	47	51.5	123	03	27.2	4,763
Crossing 50 feet south of south end of siding	43	47	34.4	123	03	40.2	1,979
North end of bridge 520 feet long	43	47	07.1	123	04	00.8	3,150
Latham, opposite station	43	46	40.0	123	04	21.3	3,120
Latham, 0.5 mile south of, hub at crossing	43	46	17.5	123	04	38.4	2,605
Latham, 1 mile southwest of, on fence line on northwest side of railroad, 200 feet to sign reading "Latham 1 mile"; iron post stamped "Prim. Trav. Sta. No. 3, 1917"	43	45	43.6	123	05	11.6	4,202
Veatch, opposite station board	43	45	26.2	123	05	59.5	3,929
Divide, 0.25 mile east of, private crossing	43	45	08.7	123	06	48.5	4,010
Divide, 200 feet west of main line, opposite head block	43	45	04.3	123	07	14.0	1,927
Crossing, 20 feet northwest of post marked "621B"	43	45	14.1	123	08	04.3	3,820
Lane and Douglas county line	43	45	17.5	123	08	14.0	790
Center of track opposite milepost 620	43	45	14.8	123	09	15.3	4,507
Milepost 619	43	45	06.6	123	10	23.4	5,071
North along highways near west border of quadrangle.							
Center of road, opposite triangular cut in fir tree on west side of road	43	45	40.0	123	13	13.2	.....
Center of road, opposite big gate to house, near top of ledge	43	46	08.8	123	13	27.4	3,003
Near top of mountain, on west side of road, halfway between unpainted house and old barn on east side of road; iron post stamped "Elev. 1058, Prim. Trav. Sta. No. 9, 1917"	43	46	19.7	123	13	31.3	1,147
Road, opposite north end of old barn on east side of road	43	46	36.7	123	13	26.2	1,758
Old road leading northeast	43	46	48.2	123	13	22.0	1,206
Near fence line, in front of white schoolhouse near sawmill, 10 feet south of road; iron post stamped "Elev. 679, Prim. Trav. Sta. No. 8, 1917"	43	47	38.3	123	13	35.4	5,173
Opposite and 50 feet east of middle point of wagon bridge 40 feet long and 16 feet wide	43	47	50.7	123	13	31.3	1,293
Middle of three-way bridge, road forks east, west, and south	43	48	05.9	123	13	34.2	1,552
Small gate at entrance to brown dwelling 200 feet east of road	43	49	04.5	123	13	55.2	6,140
Road, opposite face of white residence 110 feet east	43	49	46.2	123	14	13.2	4,417
Lorane, 30 feet northeast of signboard, T road west	43	50	12.0	123	14	20.5	2,671
Lorane, 610 feet west of T road south, 15 feet north of road; tablet set in sandstone stamped "Prim. Trav. Sta. No. 12, 1917." Elevation, 649 feet	43	50	10.0	123	14	28.3	604
East along north border of quadrangle.							
Middle of wood and woven-wire gate, 15 feet west of right-angle turn in woven-wire fence	43	59	43.4	123	14	49.5	.....
10 feet from fence, at T road fork east	43	59	40.1	123	14	30.5	1,430
Road, opposite north face of J. C. Schmidt's unpainted barn, 30 feet west of road	43	59	10.8	123	14	22.4	3,033
Crossing of center line south of roads, at T road 200 feet east of cabin	43	59	01.6	123	14	22.3	923
Road, opposite rail-fence T, on north side of road	43	58	49.3	123	13	38.8	3,420
Road, opposite small gate and mail box at entrance to canary-colored house	43	58	48.1	123	12	48.3	3,700
Hub, 50 feet from south leg and 435 feet from east fork of Y	43	58	35.6	123	12	12.0	2,942
Junction of Lorane and Eugene road and Spencer Creek road	43	58	36.5	123	12	06.5	413
In ledge on southeast side of road, on fence line, 400 feet south of small store and 30 feet north of apple tree; tablet stamped "Prim. Trav. Sta. No. 14, 1917. Elev. 505"	43	58	55.6	123	11	05.9	4,836
Road, opposite large woven-wire wagon gate at barnyard entrance to white house	43	59	43.3	123	09	15.4	9,409
Intersection of T road, 400 feet north of covered bridge, 50 feet south of 6 mail boxes	43	59	47.6	123	09	07.3	740
Center of Southern Pacific R. R., opposite milepost 641	43	59	53.2	123	00	43.4	.....

Magnetic declination along east border of quadrangle, 22.3° E.; along north border of quadrangle, 22.3°.

COTTAGEGROVE QUADRANGLE—Continued.

South along highways near west border of quadrangle. (By G. T. Hawkins in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Hub, 50 feet from south leg of Y and 435 feet from east fork	43	58	35.6	123	12	12.0	.....
East end of bridge, at center line; road fork 10 feet west of west end	43	57	40.1	123	12	29.2	5,757
40 feet west of gate to one-story house 300 feet south of white schoolhouse	43	57	13.8	123	12	25.5	2,677
30 feet north of triangular blaze on 42-inch fir tree, 20 feet east of road; iron post stamped "E. 741 No. 3, 1917"	43	56	37.0	123	12	13.8	3,831
South end of wagon bridge, 150 feet northwest of white house in hollow	43	56	17.8	123	12	12.5	1,954
Triangular blaze on 30-inch oak tree on west side of road	43	56	24.2	123	13	15.6	4,664
Road opposite gate to old house	43	56	22.8	123	13	35.6	1,472
Road opposite T fence east on east side of road	43	55	46.9	123	14	03.2	4,158
Road opposite gate to barnyard	43	55	20.5	123	14	11.9	2,752
Road, opposite T in board fence, 200 feet northeast of fork of Eugene-Lorane and Lorane-Crow roads	43	54	39.1	123	14	57.3	5,352
Fork south past white house	43	54	02.0	123	14	23.2	4,515
Road, on east side of, opposite triangular blaze on 30-inch fir tree	43	52	56.5	123	13	53.3	6,990
Road fork northeast	43	52	49.0	123	13	48.1	853
Lorane post office, 2.6 miles north of, on top of hill, 15 feet west and 35 feet south of road; iron post stamped "761 Prim. Trav. Sta. No. 6, 1917"	43	52	16.49	123	13	56.18	3,347
Road, opposite north face of white house with pink trimmings 30 feet west of road	43	51	04.7	123	14	08.3	7,326
Lorane, center of intersection of T road at Jackson's store	43	50	15.4	123	14	21.5	5,088

East along highways near south border of quadrangle.

Road, opposite small gate in wire fence of white house with green roof	43	50	34.6	123	13	08.0	5,724
Angle in road, opposite east face of yellow house	43	50	43.7	123	12	12.9	4,145
Point of forks of gravel road east over south side of hill and dirt road east	43	51	06.3	123	11	38.9	3,383
T road to Gleason house	43	51	11.7	123	11	20.0	1,488
Road, opposite wagon gate in fence on west side of road	43	51	20.3	123	10	28.3	3,895
Road, opposite mail box marked "E. N. Cruson"	43	51	00.7	123	09	57.5	3,005
Road, opposite gate in T fence on north side of road	43	50	30.6	123	09	03.2	5,010
Road fork northwest through woods up steep grade	43	49	59.2	123	08	07.8	5,169
T road northwest over bridge 40 feet north, 8 mail boxes at corner	43	49	52.4	123	07	46.3	1,720
Road, opposite white church 80 feet northwest, 250 feet southwest of district school No. 48, 1906	43	49	26.4	123	07	40.6	2,670
Road, opposite gate of Heine place	43	49	22.0	123	07	20.9	1,509
North point of fork of dirt road and gravel road	43	48	51.7	123	06	21.1	5,356
Mail box between temporary road and gravel road	43	48	48.2	123	06	20.0	301
East end of wagon bridge	43	48	15.0	123	05	54.9	3,831
North edge of road, at east fork of Y branching north	43	47	52.7	123	04	48.8	5,348
Cottage Grove, cross mark in pavement at West Main Street and Pacific Highway	43	47	52.8	123	03	51.1	4,228
Cottage Grove, road crossing on Southern Pacific R. R.	43	47	51.5	123	03	27.2	1,760

Magnetic declination for south border of quadrangle, 22.4° E.

Along highways. (By G. T. Hawkins in 1917.)

T whence one road runs to Cottage Grove and another to Latham, road to Cottage Grove runs through covered bridge, 0.25 mile east	43	45	44.5	123	03	58.1	.....
Station 548=61	43	46	17.5	123	04	38.4	4,456

ELMIRA QUADRANGLE.

Near south border of quadrangle. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crow, 1 mile north of, west side of road, 25 feet northwest of wood road running east uphill through woods; iron post stamped "Elev. 746.9. Prim. Trav. Sta. No. 1, 1917"	44	00	15.3	123	19	36.8	.....
Rauch triangulation station of the U. S. Coast and Geodetic Survey, about 12 miles west by south from Eugene, 2.5 miles southwest of Llewellyn post office and about 0.5 mile west of road leading from Llewellyn to Crow post office, on land belonging to Mrs. Frances Rauch, about 150 meters east of summit on north side of a sloping ridge about 300 feet higher than the valley through which road runs, the first prominent ridge encountered in going from Llewellyn to Crow and only ridge in vicinity from which Willamette south base can be seen. Station mark: Copper bolt and brass tablet in boulders one beneath the other. Reference marks: bolts in rock	44	00	50.96	123	19	42.16	3,631
Crow post office, Rauch triangulation station (previously described)	44	00	50.96	123	19	42.16	.....
Crow post office, 1 mile north of, on west side, 25 feet northwest of intersection of wood road east uphill through woods; iron post stamped "Prim. Trav. Sta. No. 1, 1917"	44	00	15.3	123	19	36.8	3,631

West along highways and Southern Pacific R. R. near south border of quadrangle.

South end of wooden bridge	44	00	35.8	123	20	38.4	.....
Center of plank bridge, 80 feet southeast of gray bungalow and about 0.25 mile south of white schoolhouse east of road	44	01	36.4	123	21	07.5	6,490
Tps. 17 and 18 N., R. 5 W., quarter corner between secs. 6 and 31.	44	02	44.4	123	21	02.7	6,895
Center of road crossing, 3 feet east	44	03	10.5	123	21	02.2	2,650
Veneta, 130 feet northwest of railroad station, 42 feet west of track, in line with telephone poles; iron post stamped "Prim. Trav. Sta. No. 2, 1917"	44	03	10.0	123	21	23.5	1,559
Bridge 661A, 214 feet long, trestle approach to steel girder	44	03	06.6	123	22	14.7	3,753
Elrus flag station, road crossing	44	02	57.1	123	24	17.0	8,981
Nail in plank walk, 5 feet south of south rail, at west edge of east abutment of Long Tom Creek bridge	44	02	53.7	123	25	29.7	5,322
Noti station, south rail, opposite west end of east approach to Long Tom Creek steel bridge No. 664H	44	03	20.7	123	26	18.7	4,502
Notistation, opposite south end of; south rail	44	03	27.2	123	26	46.8	2,156
Farm-road crossing	44	03	06.5	123	27	35.9	4,153
Road crossing, just south of water tank, 100 feet north of trestle 666G	44	02	33.7	123	27	50.2	3,482
South end of high trestle 667E	44	02	00.2	123	27	45.8	3,401
Vaughn, 300 feet east of station, 45 feet east of road crossing, 30 feet north of track at cattle guard, 2 feet west of wire fence; iron post stamped "Prim. Trav. Sta. No. 3, 1917"	44	01	39.0	123	26	54.6	4,310
East portal of tunnel	44	01	42.9	123	27	51.3	4,158
West portal of tunnel	44	01	36.4	123	28	23.3	2,447
Center of track at road crossing	44	01	22.2	123	28	42.7	2,021
Ivison, south rail	44	01	16.3	123	29	08.0	1,440
Flagg station	44	01	30.2	123	29	53.4	3,602

Magnetic declination along south border of quadrangle, 22.3° E.

EUGENE QUADRANGLE.

East along highways near south border of quadrangle. (By G. T. Hawkins in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road, opposite two mail boxes	44	00	40.4	123	08	00.1	.....
T road north, 200 feet northeast to brown house	44	00	55.8	123	07	00.7	4,612
T road west, 20 feet northeast to six mail boxes	44	00	59.3	123	06	24.5	2,671
Cross on rock in road fork, 1,000 feet north of gray schoolhouse	44	01	18.5	123	05	27.2	4,623
Eugene, hub at south end of Willamette Street	44	01	21.4	123	05	23.0	425
Eugene, 10 feet from north curb and 7 feet from west curb line at corner of 16th Avenue and Alder Street	44	02	34.1	123	04	45.2	7,858
Springfield Junction, head block at west end of Y	44	02	20.2	123	02	20.6	10,662
Milepost 644	44	02	15.1	123	01	58.7	1,678
West side of Southern Pacific R. R., 10 feet north and 30 feet east of mark on east rail; iron post stamped "Prim. Trav. Sta. No. 15, 1917"	44	00	31.2	123	01	06.0	11,203

Magnetic declination along south border of quadrangle, 23.7° E.

GLENADA QUADRANGLE.

South along Southern Pacific R. R. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Wendson, signpost just east of water tank	43	59	53.2	124	01	21.5	.....
East end of trestle 715F	43	59	31.3	124	01	56.4	3,380
Cushman, 350 feet west of station, 12 feet east of side track, 12 feet northwest of main track, 50 feet south of semaphore pole; iron post stamped "Prim. Trav. Sta. No. 9, 1917"	43	59	09.6	124	02	38.8	3,795
South end of long bridge over Siuslaw River	43	58	35.1	124	02	41.7	3,505
Siboco station	43	58	00.1	124	03	21.6	4,588
North end of bridge 719B	43	57	05.7	124	03	22.9	5,501
Milepost 720	43	56	22.7	124	03	06.7	4,515
Crossroad	43	56	08.1	124	02	57.7	1,621
Canary, 160 feet west of station, 25 feet west of road at gate, 3 feet south of fence on north side of right of way; iron post stamped "Prim. Trav. Sta. No. 10, 1917"	43	55	42.5	124	02	05.7	4,606
Northwest end of tunnel 16	43	55	36.2	124	01	47.2	1,494
South end of tunnel 16	43	55	30.7	124	01	43.9	607
Road crossing	43	54	18.0	124	02	44.9	8,607
North end of bridge 723C	43	54	03.5	124	02	52.6	1,576
East end of bridge 724A	43	53	45.0	124	03	19.0	2,689
Lane, north end of station	43	53	23.1	124	03	48.4	3,095
East end of bridge 725C	43	52	35.5	124	04	12.7	5,136
South end of trestle 726A, 1,000 feet long	43	52	15.6	124	04	39.1	2,785
Ada station	43	51	44.2	124	04	52.7	3,334
North end of siding	43	51	05.4	124	05	07.9	4,089
Booth station, 98 feet northeast of track, 410 feet southeast of bridge 728A, on east side of right of way, 2 feet west of fence; iron post stamped "Prim. Trav. Sta. No. 11, 1917"	43	50	52.8	124	05	19.4	1,527
East end of bridge 728E	43	50	26.4	124	05	34.6	2,889
North end of bridge 729C	43	49	59.0	124	06	10.7	3,834
North end of bridge 730A	43	49	29.8	124	06	28.2	3,221
North end of bridge 731A	43	48	54.0	124	06	56.1	4,163
North end of bridge 731E	43	48	23.1	124	07	17.7	3,506
Kroll station	43	47	27.6	124	07	30.4	5,694
Two-inch white post in ground	43	47	01.0	124	07	30.7	2,694
North end of bridge 733F	43	46	43.2	124	07	28.4	1,809
North end of tunnel 1,556 feet long	43	46	04.2	124	07	07.9	4,227
Brenham station, signpost	43	45	38.4	124	06	47.6	2,998
North end of bridge 736A	43	45	07.8	124	05	53.6	5,032
Bridge 736O	43	44	55.5	124	05	24.7	.....
North end of bridge 737O	43	44	20.7	124	04	52.3	4,253
North end of bridge	43	43	53.7	124	05	09.7	3,014
North end of siding	43	43	29.4	124	05	00.1	2,553
Gardiner, 118 feet west of railroad crossing, 260 feet southwest of signpost; iron post stamped "Prim. Trav. Sta. No. 12, 1917"	43	43	11.4	124	04	57.3	1,839
North end of bridge over Umpqua River	43	42	36.4	124	05	33.3	4,415
Reedsport station	43	42	17.0	124	05	54.3	2,496
North end of bridge 740E	43	41	46.3	124	05	52.0	3,112
North end of bridge 741C	43	41	27.2	124	04	53.8	4,687
North end of bridge 742B	43	41	05.3	124	04	31.6	2,755
North end of bridge 743A	43	40	38.6	124	05	20.5	4,488
North end of bridge 743F	43	40	12.9	124	05	22.9	2,614

GLENADA QUADRANGLE—Continued.

South along Southern Pacific R. R.—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
School station, center of track opposite	43	39	48.0	124	05	20.0	2,528
Road crossing	43	39	40.7	124	05	27.9	935
Tharp station, main track	43	38	59.9	124	05	43.0	4,276
South end of tunnel 19	43	38	25.8	124	06	44.3	5,677
Willard, 85 feet south of signpost, 60 feet east of west rail, in line with north end of old bunk house, near edge of field; (not stamped) Prim. Trav. Sta. No. 13	43	38	01.8	124	07	21.9	3,681
North end of bridge 748C	43	37	25.2	124	08	02.4	4,757
Douglas and Coos county-line post	43	36	42.0	124	08	43.8	5,327
North end of tunnel 20	43	35	49.8	124	08	54.4	5,335
Burke, center of track	43	35	20.3	124	09	24.5	3,718
North end of trestle, just north of tunnel 21	43	35	10.4	124	09	28.0	1,032
Lakeside, 400 feet north of station, 86 feet west of track, in southeast corner of section-house yard; iron post stamped "Prim. Trav. Sta. No. 14, 1917"	43	34	43.0	124	10	21.9	4,845
East end of bridge	43	34	36.6	124	11	28.5	4,946
North end of bridge 753B, over highway	43	34	19.4	124	11	51.7	2,441
Road crossing	43	33	13.2	124	12	31.3	7,305
North end of bridge 755D	43	32	37.3	124	12	44.5	3,761
North end of bridge 756D	43	32	08.6	124	12	55.1	3,006
Butterfield station	43	31	15.2	124	13	22.5	5,775
Road crossing	43	30	09.1	124	13	29.4	6,713

No magnetic declination taken.

Along highways near east border of quadrangle. (By F. J. McMaugh in 1917.)

Northwest end of tunnel 16	43	55	36.2	124	01	47.2	.....
Road fork, 30 feet southeast to signpost marked "Gardiner 22 miles, Ten Mile Lake 2.5 miles, Fiddle Creek 6 miles"	43	55	41.7	124	01	30.7	1,330
T road south across bridge	43	55	39.1	124	01	27.6	347
West end of bridge	43	55	40.6	124	01	16.2	855
Road fork	43	55	42.9	124	00	41.7	2,531
Mr. Buss's house, 16 feet southwest of center of road at gateway into	43	55	48.6	124	00	01.4	3,008

Magnetic declination for east border of quadrangle, 21.4° E.

HECETA HEAD QUADRANGLE.

Along highways. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
East end of bridge 713G	44	00	31.6	124	00	14.6	.....

South along highways near east border of quadrangle. (By J. C. Fales in 1917.)

Opposite and 20 feet east of board and barbed-wire wagon gate, at entrance to Sharman's barn	44	14	41.1	124	06	38.0	.....
Opposite and 60 feet west of wooden wagon gate with overhead bracing on north side of road	44	13	24.3	124	06	40.0	7,783
Opposite and 15 feet east of T fence where rail fence on west side of road ends in barbed-wire fence running along bluff	44	12	55.0	124	06	49.4	3,042
Opposite and 20 feet east of front door of a brown, shingled house on west side of road	44	12	31.2	124	06	47.2	2,415
T where board fence joins barbed-wire fence running along top of bluff	44	11	33.1	124	06	48.0	5,890
West of road, in middle of saddle	44	11	11.1	124	06	52.6	2,248
Fence on south side of Big Creek, 50 feet east of corner of intersection of Big Creek and Ocean Bluff	44	10	29.8	124	06	54.6	4,184
Opposite point where creek emerges from sand hills upon beach	44	09	28.8	124	07	05.6	6,228
Opposite and 100 feet west of small unpainted shack near point of bluff	44	08	45.9	124	07	13.0	4,379
Point where trail crosses summit in thick grove of spruce	44	08	25.4	124	07	16.9	2,097
Keepers Cottage, chimney (no check on this position). U. S. Coast and Geodetic Survey triangulation station (Special Pub. No. 31, p. 63)	44	08	13.38	124	07	28.68	1,490

Magnetic declination for east border of quadrangle, 21.2° E.

MOUND QUADRANGLE.

West along highways in southeast corner of quadrangle. (By G. T. Hawkins in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road, opposite triangular cut on 30-inch fir tree 10 feet east of road	43	49	30.6	123	15	29.3	
Road, opposite small gate at entrance to Crow's white residence	43	49	37.5	123	15	45.4	1,377
Siuslaw River, east end of bridge over	43	49	34.9	123	16	04.3	1,411
Road, opposite small gate, at entrance to Alder Park	43	49	11.2	123	16	24.7	2,822
Double gate at entrance to unpainted barn, 250 feet south of dwelling	43	48	58.7	123	16	43.0	1,851
East end of bridge 150 feet long	43	48	56.3	123	17	06.7	1,752
Rail gate at corner of rail and wire fence	43	49	12.3	123	17	51.7	3,677
East end of wagon bridge 16 by 20 feet	43	49	16.4	123	18	19.8	2,096
East end of wagon bridge at farm	43	49	19.7	123	18	49.4	2,198
Road opposite T road leading over bridge 75 feet south	43	49	24.4	123	19	20.6	2,335
T road through wooden gate to dwelling 500 feet south	43	49	53.5	123	20	13.3	4,863
Road fork, 400 feet west of box cabin	43	50	18.7	123	20	53.7	3,911
North end of wagon bridge	43	50	45.7	123	21	33.6	4,002
10 feet west of 1 by 1 foot culvert through which spring stream drains, north one of two 200 feet apart	43	51	02.1	123	21	49.2	2,020
Fork of trail to Owen's house from road, old road up steep hill to east	43	51	12.4	123	21	39.2	1,267
East end of wagon bridge 35 feet long	43	51	17.7	123	21	36.8	571
Triangular cut on 30-inch yellow-pine tree 15 feet south of road, at crossroads	43	51	18.2	123	21	47.8	809
Fork of trail to north	43	51	07.2	123	22	17.0	2,410
East end of rail wagon bridge	43	50	56.9	123	22	32.1	1,521
Triangular cut on north side of 30-inch cedar tree, nail in center; tree is 20 feet south of road	43	50	34.7	123	22	41.5	2,345
County road, opposite entrance of Mr. Hawley's farm	43	50	39.1	123	23	16.1	2,573
Triangle cut on hemlock tree 15 feet west of road, at sharp bend to north	43	51	09.5	123	24	15.4	5,330
Southeast end of bridge	43	51	20.6	123	24	08.2	1,241
Triangle cut on 18-inch hemlock tree on north side of road, on south slope of ridge, 0.25 mile west of deserted house	43	51	22.6	123	24	51.3	3,158
Middle of bridge, 60 feet east of fork of second-class road	43	51	35.8	123	24	58.1	1,430
Road, opposite deserted house on southwest side of	43	51	47.6	123	25	23.3	2,200
Triangle cut on 18-inch fir tree on northwest side of road, about 0.25 mile north of deserted homestead, on northwest slope of ridge	43	51	56.6	123	25	29.6	1,021
Pole bridge	43	52	14.9	123	25	30.8	1,855
Road, opposite deserted cabin in clearing	43	52	29.7	123	25	54.9	2,319
Triangle cut on 24-inch fir tree at northwest corner of clearing	43	52	32.3	123	25	59.3	416
North end of pole bridge, at old field	43	52	54.0	123	26	31.0	3,203
Triangle cut on 18-inch fir tree on west side of road	43	53	05.5	123	26	29.5	1,173
South end of long bridge	43	53	09.9	123	26	24.6	573
South end of pole bridge 40 feet long	43	53	41.6	123	26	31.9	3,251
Road, opposite triangle cut on 20-inch Douglas fir tree, at south side of trail, at sharp turn	43	53	41.1	123	26	52.0	1,468
Alma post office, 1 mile east of, three corners at point where Mound post office was situated	43	53	46.5	123	27	05.3	1,123
Road, opposite Mr. Hooker's gate	43	54	03.6	123	26	46.4	2,214
Triangle cut on 5-foot fir tree, on top of ridge at old sand pit	43	54	38.7	123	26	55.0	3,615
Ledge of rock 8 feet high on north side of road; face of ledge is marked "U. S. B. M."; tablet stamped "Prim. Trav. Sta. No. 13, 1917." A triangle cut on 40-inch fir tree on opposite side of road, 20 feet east of tablet	43	55	00.9	123	27	05.8	2,381

Northeast along highways through center of quadrangle.

Forks, 20 feet west of 6-foot fir tree, five fire warnings	43	55	26.4	123	26	05.5	5,119
South end of bridge over Wolf Creek	43	55	35.6	123	25	10.4	4,136
South end of bridge over branch	43	55	40.5	123	25	06.0	594
Wolf Creek bridge, 0.25 mile northeast of; triangle cut on 40-inch fir tree on west side of road	43	55	40.8	123	25	03.4	192
Second-class road fork to Mr. Peabody's house, east entrance from main road	43	56	04.0	123	23	46.3	6,114
Road, opposite south end of barn, at trail forks westerly to residence of Mr. Danewood	43	56	42.2	123	22	58.9	5,193
Wagon gate at 40° turn in board fence	43	56	45.1	123	22	56.6	339
150 feet north of white schoolhouse, T road, intersection of center lines	43	57	00.1	123	22	39.1	1,988
Gate in picket fence at entrance to whitewashed house, 90 feet south of gate	43	58	03.0	123	21	49.2	7,347
Fork at junction of new cut-off road with original road	43	58	43.0	123	21	33.9	4,198
South end of wagon bridge 40 by 16 feet	43	59	06.6	123	21	04.7	3,209
14-inch corner post at southeast corner of T road, 800 feet west of white school house	43	59	25.8	123	20	38.6	2,726
Crow post office and store, 20 feet east of southwest corner of fence, cross on rock at T road south	43	59	31.6	123	20	10.0	2,172

MOUND QUADRANGLE—Continued.

East along north border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Stake, 20 feet north of first telephone pole east of wooden gate on south side of road, at fork at farm of J. Gates, opposite large door of hay barn	43	59	10.4	123	19	42.1	2,961
West end of covered bridge	43	59	18.7	123	18	40.2	4,604
Road, opposite gate at entrance to residence of J. V. Jenkins	43	59	25.1	123	17	37.5	4,631
Road, opposite 48-inch oak tree, which forks 6 feet above ground, tree is on north side of road	43	59	57.0	123	16	14.1	6,905
Center of Y of roads, T road to north at M. J. Smith's house, 300 feet northeast to house, 400 feet west to new barn, 300 feet southeast to old barn	43	59	57.2	123	15	53.3	1,522

Magnetic declination for center of quadrangle, 22.2° E.

ROSEBURG NO. 1 QUADRANGLE.

North along highways near northwest corner of quadrangle. (By G. T. Hawkins in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Covered bridge 345 feet long	43	26	25.9	123	14	23.9	
Turn in road 55 feet east of gate at fence T	43	26	42.1	123	14	17.3	1,704
Fork in road, where Elkhead road leaves main road	43	26	55.1	123	13	52.9	2,233
Center line of wagon bridge 50 feet long	43	27	31.4	123	13	59.4	3,701
T road near small house	43	27	54.4	123	14	01.6	2,341
Intersection with old road over hill	43	27	59.6	123	13	35.6	1,987
Road, in front of schoolhouse	43	28	22.1	123	13	22.1	2,489
Road, opposite red gate, 200 feet south of barn	43	29	05.2	123	13	08.8	4,472

Magnetic declination for northwest corner of quadrangle, 21.1° E.

ROSEBURG NO. 2 QUADRANGLE.

South along Southern Pacific R. R. (By G. T. Hawkins in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Opposite milepost 594	43	29	03.3	123	18	44.8	
Opposite milepost 593	43	28	13.7	123	18	45.4	5,026
Crossing of Pacific Highway, 20 feet east of bridge	43	27	37.0	123	19	10.0	4,134
Youngs station board, track opposite	43	26	19.2	123	18	45.4	8,088
North end of bridge 1,120 feet long	43	26	01.6	123	18	25.3	2,320
Road crossing, 30 feet east of iron bridge	43	25	31.9	123	18	05.0	3,356
Oakland station, in front of window	43	25	20.7	123	17	57.0	1,280
Oakland station, about 84 feet west of Pacific Highway; iron post stamped "Prim. Trav. Sta. No. 9"	43	25	20.8	123	17	55.4	118
Elbow in road east, 200 feet west of road fork	43	25	55.3	123	16	47.2	6,124
Road fork, 30 feet northwest of signpost reading "Oakland 3 miles; Cottage Grove 35 miles"	43	26	21.2	123	15	03.9	8,063

Magnetic declination for south part of quadrangle, 22.5° E.

SCOTTSBURG (NO. 1) QUADRANGLE.

West along Southern Pacific R. R. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
East end of bridge 679J	43	59	48.5	123	36	45.6	.....
Joler station, at east end of; south rail at switch stand	43	59	39.8	123	37	07.5	1,826
East end of Wild Cat Creek bridge	43	59	45.2	123	37	44.9	2,788
Nail in tie at road crossing, house west and gate east	43	59	51.0	123	37	51.6	761

East along highways near north border of quadrangle. (By F. J. McMaugh in 1917.)

Tree with triangular blaze	43	57	04.1	123	44	43.1	.....
Tree with arrow blaze, at summit of mountain	43	56	49.1	123	44	33.8	1,667
Triangular blaze on tree at summit of mountain, 80 feet southwest of place where telephone line crosses road	43	56	25.7	123	44	21.3	2,536
Triangular blazed tree	43	56	45.6	123	43	55.1	2,788
Alder tree with triangular blaze	43	57	19.0	123	43	42.0	3,510
South end of corduroy bridge over draw	43	57	18.7	123	43	20.6	1,569
Small tree marked "Town line 9 tallies east to secs. 1 and 6, T. 9 S., Rs. 8 and 9 W"	43	57	18.7	123	42	47.3	2,430
Gateway	43	57	28.4	123	42	32.1	1,488
First crossing of creek	43	57	26.6	123	42	20.3	878
Second crossing of creek	43	57	25.9	123	42	15.4	366
Tree on south bank of creek, blazed and marked "245 paces south to northwest corner of sec. 6, T. 19 S., R. 8 W., U. S. G. L. O"	43	57	24.9	123	42	11.4	310
Tree on north side of road, marked "3 miles"	43	57	33.2	123	41	22.8	3,654
Tree with triangular blaze at fork of road leading to cabin	43	57	39.0	123	41	08.1	1,225
West end of small bridge near camp site	43	57	45.2	123	40	31.8	2,733
South end of small bridge	43	58	08.8	123	40	14.7	2,694
Road fork	43	58	34.7	123	40	08.4	2,661
Road fork	43	59	04.6	123	39	59.6	3,099
Large fir tree with triangular blaze on west bank of Siuslaw River	43	59	06.1	123	39	33.6	1,913
Austa, south of, 610 feet north of road fork at ford across Siuslaw River, 3 feet east of road, in rock outcropping; bronze tablet stamped "Prim. Trav. Sta. No. 20, 1918"	43	59	11.0	123	39	26.6	709
Tree marked with triangular blaze	43	59	29.8	123	39	45.6	2,357
Center of road, opposite fence corner just south of old barn	43	59	45.7	123	39	48.8	1,634

Magnetic declination for north border of quadrangle, 21.7° E.

SCOTTSBURG No. 2 QUADRANGLE.

East along highways near north border of quadrangle. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Northwest end of bridge, 200 feet north of house	43	55	34.5	123	58	07.7	.....
Corner of fence, 20 feet north of gate, 100 feet north of small house, 20 feet east of culvert; blazed and marked "Sta. 915 +186"	43	55	48.1	123	58	06.0	4,720
West end of bridge, 5 miles east of Shultz place	43	56	11.9	123	57	25.4	3,825
Milepost marked "25 M. P.", on north side of road	43	56	10.8	123	57	18.4	524
Canary, 5 miles east of, 120 feet north of Coleman house, 110 feet east of small bridge, 15 feet south of road, 20 feet northwest of barn; iron post stamped "Prim. Trav. Sta. No. 17, 1917"	43	56	12.4	123	56	52.1	1,931
Small stream	43	56	12.2	123	56	17.0	2,570
Northeast end of bridge, 10 feet east of tree marked "19.11 W 7".	43	56	11.1	123	56	09.6	554
Culvert in bend of road	43	56	16.5	123	55	35.1	2,584
Burnt snag on left side of road, marked "Sta. 1041 +84"	43	56	22.4	123	55	41.0	737
Road, opposite fir tree with triangular blaze and marked "Sta. 1080 U. S. G. S."	43	56	33.5	123	55	03.5	2,870
West end of bridge, 120 feet northeast of ranger's cabin	43	56	48.5	123	54	35.6	2,547
Opposite large fir tree marked "91 M R" (old blaze)	43	56	53.0	123	54	27.2	765
Cedar stump at east side of road with triangular blaze, marked "U. S. G. S."	43	56	55.6	123	54	19.6	615
Northwest corner of abandoned cabin, at bend in road	43	56	39.4	123	54	19.5	1,637
Intersection of trail leading to Point Terrace	43	56	25.1	123	53	55.0	2,308
West end of corduroy bridge over Bear Creek	43	56	22.7	123	53	54.4	248
Southwest end of bridge over Sweet Creek	43	56	31.1	123	53	22.6	2,479

SCOTTSBURG NO. 2 QUADRANGLE—Continued.

East along highways near north border of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
West end of bridge, 60 feet southwest to intersection of road north, 110 feet northeast to schoolhouse	43	56	31.9	123	52	36.2	3,401
Earl post office, 0.5 mile west of, 32 feet northeast of northeast corner of Will Goodwin's house, 18 feet west of barn, 30 feet south of road, inside yard; bronze tablet in top of stone stamped "Prim. Trav. Sta. No. 18, 1917"	43	56	28.6	123	52	06.7	2,184
Earl post office, just west of, west end of small bridge	43	56	33.4	123	51	34.2	2,426
Fir tree with triangular blaze	43	56	47.0	123	50	45.0	3,855
Tree with triangular blaze	43	56	52.8	123	50	15.6	2,231
Road fork	43	56	53.9	123	50	08.6	524
Fir tree with triangular blaze	43	57	05.1	123	50	02.0	1,229
Gate across road	43	57	16.9	123	49	51.4	1,431
West end of bridge	43	57	18.3	123	49	24.3	1,981
Gate post at south end of gate	43	57	03.0	123	48	41.5	3,495
North gatepost at gateway, 160 feet east of small cabin in field	43	56	53.6	123	48	24.5	1,562
West end of corduroy bridge over small creek	43	56	54.0	123	48	07.9	1,220
South end of bridge	43	57	00.6	123	47	11.7	4,167
Earl post office, 6.5 miles east of, 0.2 mile southeast of house occupied by Charles Judd on Fiske ranch, 150 feet northeast of fence corner, 9 feet east of road, in large boulder; bronze tablet stamped "Prim. Trav. Sta. No. 19, 1917."	43	56	56.5	123	46	57.5	1,118
Tree used for gatepost	43	57	04.8	123	46	27.8	2,335
Center of road, at gateway	43	56	59.9	123	46	08.5	1,494
Tree with old blaze, marked with S and A	43	56	59.2	123	46	03.2	396
Fork in road, shed to southeast	43	56	56.2	123	45	49.2	1,064
Tree at gateway	43	56	48.6	123	45	24.3	1,977
Tree with triangular blaze, 135 feet south of small corduroy bridge	43	56	53.2	123	45	13.6	911
Tree with triangular blaze, 90 feet south of small bridge	43	56	59.4	123	45	09.9	681

SCOTTSBURG NO. 3 QUADRANGLE.

Along highways near center of quadrangle. (By J. C. Fales in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
West end of long new timber bridge	43	39	30.8	123	45	44.9	.....
Road, opposite wooden gate in woven-wire fence, at T on west side of road	43	39	39.7	123	47	09.8	6,303
South end of bridge 120 by 16 feet	43	40	07.6	123	47	25.5	3,051
South end of bridge, opposite gate on second-class road, on east side of road; this road forks at 2267+360	43	40	32.2	123	47	47.7	2,973
North end of unrailed wagon bridge 24 by 16 feet	43	39	51.9	123	48	31.6	5,197
In rock at T whence road leads south across Umpqua River toward Allegheny; tablet stamped "Prim. Trav. Sta. No. 102"	43	39	15.4	123	49	03.1	4,363
Cross mark in rock, in center of road, 500 feet east of ferry landing	43	39	06.7	123	48	59.8	910
East end of center line of bridge 60 by 16 feet, railing on both sides	43	39	02.2	123	48	43.3	1,298
Triangle on 50-inch tree, on east side of road	43	38	37.8	123	48	34.7	2,550
Road, opposite triangle on 20-inch fir tree 8 feet east of road	43	38	27.6	123	48	20.0	1,493
Road fork whence road leads southwest on steep grade, picket fence opposite	43	37	54.5	123	48	47.3	3,905
Road, opposite triangle on 24-inch fir tree at east edge of road	43	37	18.0	123	48	31.4	3,874
Road, opposite front door of shack 30 feet north of road	43	37	15.0	123	48	16.1	1,167
South end of bridge 60 by 16 feet	43	37	08.4	123	48	07.5	916
Southwest corner of log bridge 40 by 18 feet	43	36	53.1	123	48	14.0	1,622
Road, opposite triangle on 15-inch fir tree at northeast corner of deserted blacksmith shop, 20 feet south of road	43	36	34.7	123	48	00.0	2,130
East end of bridge 10 by 14 feet, unrailed	43	36	32.9	123	47	23.2	2,719
Fork whence road leads northward, main road crosses bridge west end of which is at 2493+50	43	36	27.0	123	47	04.6	1,490
Road, opposite triangle on 36-inch fir tree at east edge of road	43	35	50.8	123	47	09.0	3,687
East end of log and plank culvert from spring 10 feet west of road	43	35	34.2	123	47	39.8	2,817
Road, opposite triangle on 36-inch fir tree at east edge of road	43	34	54.1	123	47	55.3	4,215
South end of log and plank bridge 18 by 16 feet, unrailed	43	34	41.9	123	48	31.9	2,971
Road, opposite gate in picket fence, at entrance to J. H. Boak's red bungalow	43	34	35.6	123	49	13.1	3,098
Road, opposite wooden gate, at corner where board fence joins woven-wire fence	43	33	54.7	123	49	41.7	4,644

SCOTTSBURG NO. 3 QUADRANGLE—Continued.

Along highways near center of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
North end of bridge 60 by 16 feet, railing on both sides; bridge is 120 feet south of John Babers's house	43	33	49.0	123	49	28.0	1,162
South end of wagon bridge, which is 100 feet north of north face of Ash Valley Cheese Factory	43	33	36.2	123	49	16.9	1,530
Fork in road whence road leads east past Parker's red bungalow 1,000 feet distant	43	33	20.2	123	49	19.0	1,624
Road, opposite door of white schoolhouse of Ash Valley school district No. 125, 30 feet east of road	43	33	03.7	123	49	22.7	1,695
Road, at a point where a 14 foot by 48 inch log has been cut out of a fir tree fallen across road	43	32	44.2	123	49	36.3	2,210
Road, opposite small gate in picket fence, at entrance to unpainted house	43	31	59.2	123	49	28.7	4,594
Road, opposite triangle on 36-inch fir tree at east edge of road	43	31	47.7	123	49	52.7	2,121
Road, opposite triangle on 60-inch fir tree 10 feet south of road	43	32	12.7	123	50	40.5	4,335
South edge of road, opposite triangle on 12-inch fir tree at north edge of road	43	32	16.3	123	51	38.7	4,298
Center of road, at intersection of trail to Reedsport. (From this point line follows trail)	43	32	12.9	123	51	41.6	397
Fork in trail whence trail leads to spring about 300 feet north	43	32	46.6	123	51	56.8	3,586
Fork whence trail leads from Reedsport trail toward Elk's Peak, signboard shows distances to four points, Elk's Peak is 3 miles	43	33	01.6	123	52	13.4	1,951
Fork whence trail leads southwest downhill	43	33	03.3	123	53	10.3	4,196
First switchback in trail	43	32	30.5	123	54	27.2	6,566
Elk Peak triangulation station, on a narrow peak 200 feet long with a 15-foot summit. Point shown by the hub at station 2909 was identified by H. E. Baker of Ash, Oreg., as being near the original point of the signal, which he describes as a tree with a triangle on the side and a white signal flag fastened to the top. Two fir trees, each 24 inches in diameter, stand near together on the peak, and a white linen flag, measuring 3 by 4 feet, was fastened to the top of the eastern of these two trees. A U. S. Coast and Geodetic Survey tablet was also set on the ridge west of the signal. This tablet is set in sandstone, which is not durable but is the only rock available. Tablet stamped "Prim. Trav. Sta. No. 103, 1917." All angles shown are azimuth angles, 0° 00′ 00″, being set on station 2908. The signal tree is marked with a triangle on the west side and three nails are driven in to the tree within the triangle. Three sticks forming a ladder were nailed to tree	43	32	26.20	123	54	33.79	649

Magnetic declination for center of quadrangle, 21° 16′ E.

SCOTTSBURG NO. 4 QUADRANGLE.

West along highways near center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
East end of center line of 450-foot steel and timber wagon bridge across Elk Creek	43	39	26.1	123	30	00.4	
Road, opposite board wagon gate, in wire and rail fence on south side of road	43	38	53.6	123	30	16.43	3,495
West edge of road, opposite triangle on 40-inch fir tree on west side of road	43	38	42.4	123	30	41.93	2,192
Southeast corner of wagon bridge 30 by 16 feet with railing on east side only	43	38	44.7	123	30	57.34	1,156
Small woven-wire foot gate, at entrance to unpainted house 150 feet south of road	43	38	35.4	123	31	58.5	4,592
Rock 2 by 2 by 1.5 feet, on south side of road, in gore, at east junction of original dirt and corduroy road and new gravel road	43	38	20.4	123	32	57.7	4,614
T road to Oakland, east fork of Y	43	38	04.0	123	33	51.5	4,286
Elkton, 15 feet east of road, in a ledge of rock, 50 feet north of north end of covered bridge; tablet stamped "Prim. Trav. Sta. No. 100, 1917"	43	38	06.8	123	33	56.4	458
Road, opposite wooden foot gate in woven-wire fence, at entrance to white two-story house 100 feet east of road	43	38	32.1	123	34	36.5	3,907
Road, opposite fence T on south side of road, where a north and south barbed-wire fence ties to an east and west fence on the west and an east and west woven-wire fence on the east	43	38	57.25	123	35	40.2	5,336

SCOTTSBURG NO. 4 QUADRANGLE—Continued.

West along highways near center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road, between small gates entering, respectively, barnyard on south and house on north, 90 feet south to red building, marked "Bruder Bros., 1915." Big red barn is 100 feet southwest (1916), white house is 80 feet north	43 39 03.1	123 36 06.2	1,999
Road, opposite dead, double, white-ash snag on south side of road, each fork 12 inches in diameter	43 39 04.8	123 37 43.7	7,172
East end of wagon bridge 50 by 16 feet	43 39 02.1	123 38 06.4	1,689
Road, opposite foot gate in woven-wire fence, at entrance to S. N. Brown's two-story white house 50 feet north of road	43 38 49.7	123 38 54.7	3,767
T whence second-class road leads south toward river	43 38 24.9	123 39 50.6	4,814
Fork whence road leads south toward river, 60-inch fir tree in gore with mail box on east side of tree	43 39 39.9	123 39 11.6	8,118
North end of new wagon bridge 60 by 16 feet	43 40 13.8	123 39 4.8	3,468
South end of covered wagon bridge	43 40 19.1	123 39 2.4	573
East end of unrailed wagon bridge 16 by 16 feet	43 41 00.9	123 39 21.4	4,452
Road, opposite wooden wagon gate at T of woven-wire fences, on south side of road	43 40 56.0	123 40 22.7	4,538
Point 25 feet south of double wooden wagon gate, at entrance to William Sawyer's white two-story house, 100 feet north of road	43 40 48.5	123 40 48.6	2,040
North end of new wagon bridge	43 40 12.8	123 41 40.9	5,282
Road, opposite wagon gate at entrance to A. L. Butler's house, wooden stile 8 feet east of gate	43 39 44.6	123 42 31.8	4,706
Road, opposite woven-wire foot gate at entrance to white schoolhouse with red roof, marked "Long Prairie District School, No. 38"	43 39 39.3	123 43 28.6	4,204
Patterson Creek, 1,000 feet south of bridge over, on rock on west side of road; tablet stamped "Prim. Trav. Sta. No. 10, 1917"	43 39 43.5	123 44 14.0	3,371

Magnetic declination of quadrangle 21° 53′ E.

WALDPORT QUADRANGLE.

South along highways near east border of quadrangle. (By J. C. Fales in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road to Collins's house, 200 feet west of	44 29 26.7	124 04 44.6	
Seal Rocks, road which leaves beach to get around to, south side of road, in rock; tablet stamped "Prim. Trav. Sta. No. 109, 1917"	44 29 00.4	124 04 56.3	2,794
Opposite and 305 feet west of dilapidated inhabited shack in a draw down which stream runs	44 28 47.4	124 04 52.5	1,340
First telephone pole south of small creek, 15 feet west of	44 27 45.5	124 04 43.5	6,304
Opposite and 175 feet east of southern summit of the southwest mound of a group, east side of mound is grassed, south side is bare sand, mound is 250 feet long north and south and has a well-defined backbone ridge	44 26 31.5	124 04 48.3	7,409
Center line of tramway, automobile road is at point 305 feet east of junction of tramroad with plank road	44 26 01.6	124 04 45.1	3,136
Opposite and south of south end of a double line of piling 200 feet long	44 25 43.9	124 03 59.6	3,757
Waldorf, in truncated pyramid of concrete 24 inches deep, 6 inches square at bottom, and 3 inches square at top, wooden forms not removed; bronze tablet stamped "Prim. Trav. Sta. No. 110, 1917"	44 26 01.8	124 03 32.9	2,652
North end of plank walk, on west side of road	44 25 26.8	124 04 12.1	4,545
Opposite and 205 feet west of a triangulation station of Alsea Bay survey, small shanty 20 feet south of point	44 24 59.7	124 05 00.3	4,446
Opposite and 220 feet west of sand indent in vertical sand bluff, indent is about 20 feet deep and has brush and scrub pines in it	44 24 08.1	124 05 08.8	5,263
Crossing of creek which flows out upon sand beach 200 feet east	44 23 36.1	124 05 13.9	3,260
Opposite and 200 feet west of dismantled and weather-beaten house, 60 feet from edge of bluff	44 22 06.0	124 05 31.3	9,210
Opposite and 115 feet west of unpainted shack, 30 feet from bluff, sign on door marked "San Marine"	44 21 24.7	124 05 39.9	4,230
Opposite and 215 feet west of north end of bar of large rocks at edge of sand	44 20 43.5	124 05 48.4	4,220

WALDPORT QUADRANGLE—Continued.

South along highways near east border of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Opposite and 50 feet west of southwest corner of small green cottage with red trimmings	44	19	43.7	124	06	04.8	6,173
Ocean View, T road west, 400 feet west of store	44	18	38.5	124	06	08.1	6,604
Center line of covered bridge across Yahats Creek, north end of trestle approach	44	18	32.1	124	05	57.4	1,015
Telephone pole at north bank of creek	44	17	48.3	124	06	30.1	5,039
Gate in fence across road, 100 feet north of unpainted shelter shack	44	17	23.3	124	06	37.0	2,577
In rock at east edge of road; tablet stamped "Prim. Trav. Sta. No. 111, 1917"	44	17	11.9	124	06	41.0	1,191
Southwest corner of log bridge 40 feet long	44	16	54.5	124	06	18.0	2,433
Gate across road	44	16	47.5	124	06	29.1	1,074
Fence line, 10 feet north of south post at bluff	44	16	11.6	124	06	26.3	3,642
Northwest corner of wagon bridge 12 by 20 feet	44	15	25.1	124	06	31.4	4,727

Magnetic declination for east border of quadrangle, 22.0° E.

Northwest along highways near east border of quadrangle. (By J. C. Fales in 1917.)

Opposite and 15 feet north of small gate in board and wire fence on north side of road	44	24	48.9	124	00	24.6	.....
Road, opposite board and wire gate at entrance to large unpainted barn with slate roof	44	24	49.6	124	00	58.3	2,445
Road, opposite triangular blaze on 36-inch hemlock tree at angle of road	44	24	56.8	124	02	03.5	4,793
East end of bridge 600 feet long, at road entrance to Waldport	44	25	53.3	124	03	21.9	8,072
Waldport, Prim. Trav. Sta. No. 110, 1917	44	26	01.8	124	03	32.9	1,176

Magnetic declination for east border of quadrangle, 22.6° E.

East near south border of quadrangle. (By J. C. Fales in 1918.)

Center line of covered bridge across Yahats Creek	44	18	32.1	124	05	57.4	.....
Bridge 20 by 14 feet without railing, east end of	44	18	40.7	124	05	19.8	2,866
Bridge 10 by 12 feet across small creek, west end of, no railing on either side	44	18	31.8	124	04	28.7	3,817
Road opposite small wooden foot gate at fence, fork on south side of road, metal mail box near	44	18	22.3	124	04	13.3	1,479
Road, opposite 90-inch spruce snag 50 feet high, which stands 15 feet south of road	44	17	57.5	124	03	05.0	5,564
Road, opposite rail wagon gate in rail and post fence at entrance to unpainted barn, gate is 50 feet northwest of barn	44	17	55.8	124	02	45.6	1,416
Road, opposite small picket gate in rail and post fence on north side of road, at entrance to unpainted house 125 feet north of road	44	17	47.1	124	02	05.2	3,071
Ford at creek	44	17	46.6	134	01	21.6	3,166
Road, opposite southeast corner of large unpainted barn at north side of road	44	17	38.6	124	00	32.8	3,646

Magnetic declination for south border of quadrangle, 21.1° E.

YONCALLA QUADRANGLE.

South along Southern Pacific R. R. near east border of quadrangle. (By G. T. Hawkins in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Safety station board, second-class road crossing	43	42	03.7	123	15	30.2	.....
North end of iron bridge	43	41	53.7	123	16	20.7	3,841
Leona, 560 feet southwest of, on east side of railroad, 10 feet south of wagon road, 6 feet northwest of gate to large house, in yard; iron post stamped "Prim. Trav. Sta. No. 5, 1917"	43	41	46.6	123	17	03.9	3,254
North end of iron bridge	43	41	11.7	123	17	48.8	3,835
Krewson, crossing, 200 feet west of Howe truss bridge	43	40	45.2	123	18	00.2	2,820
Farm-road crossing	43	40	31.5	123	18	22.3	2,132
Drain, 685 feet north of station; iron post stamped "Prim. Trav. Sta. No. 6, 1917"	43	39	59.1	123	18	47.3	3,759
Drain, opposite middle window of station	43	39	53.4	123	18	47.9	577
Drain, road crossing south of station	43	39	47.6	123	18	48.8	600
North end of Elk Creek bridge	43	39	03.3	123	18	34.5	4,604
Milepost 607	43	38	38.2	123	17	53.6	3,941
Farm-road crossing, 500 feet east of old barn	43	38	11.5	123	17	57.0	2,718
Devore station, private-road crossing	43	37	54.5	123	17	45.2	1,925
Milepost 605	43	37	05.0	123	17	07.3	5,740
Yoncalla, at north end of siding, road crossing	43	36	16.8	123	16	53.2	4,990
Yoncalla station, road crossing at north end of	43	36	01.4	123	16	51.2	1,567
Road crossing, 100 feet southwest of red house	43	35	40.4	123	16	48.8	2,130
Road crossing, 20 feet west of crossing sign	43	34	49.0	123	16	37.0	5,278
Yoncalla, 2 miles south of, at east fence line; iron post stamped "Prim. Trav. Sta. No. 7, 1917"	43	34	11.4	123	16	24.8	3,912
Road crossing under railroad	43	33	39.1	123	16	38.9	3,443
Track, opposite milepost 600	43	32	52.7	123	16	56.8	4,879
Goodrich Highway crossing	43	32	01.4	123	17	02.3	5,213
On east side of railroad, 900 feet south of highway crossing, at old railroad crossing; iron post stamped "Prim. Trav. Sta. No. 8, 1917"	43	31	47.5	123	17	01.2	1,410
Rice Hill station, track opposite	43	31	37.9	123	18	18.4	5,764
Private-road crossing under railroad, 120 feet northeast of barn	43	30	58.7	123	18	40.9	4,309
Private crossing	43	30	30.5	123	18	34.1	2,891
Isadoro station, private-road crossing	43	30	07.4	123	19	03.0	3,163

Checked spur line west from Drain and return. (By G. T. Hawkins in 1917.)

Crossing of Southern Pacific R. R., south of Drain	43	39	47.6	123	18	48.8	.....
Farm road with gate at each side	43	39	41.6	123	19	57.5	5,087
Fork of new road and old road, which join again about 0.5 mile west	43	39	44.6	123	20	53.3	4,117
Junction of old road and new road	43	39	58.0	123	21	20.6	2,424
Center line of bridge 75 feet long, about 100 feet southwest of old sawmill	43	39	57.1	123	22	05.6	3,303
Point in road fork, northeast of Sunnydale schoolhouse	43	39	47.9	123	23	21.9	5,686
70° angle in road, near bank of road, protected by rock	43	39	40.8	123	24	44.7	6,119
North edge of road, 90 feet north and 10 feet east from corner of red barn, marked "The Oaks Dairy, E. Snell;" iron post stamped "2 10 27, 1917"	43	39	53.7	123	26	04.4	6,000
Road, about 200 feet N. 16° E. from Sunnydale school	43	39	47.9	123	23	21.3	12,015
Center of bridge 75 feet long	43	39	57.1	123	22	05.6	5,651
West end of concrete wing wall for bridge abutment	43	39	43.0	123	20	46.7	5,968
Drain, crossing of Southern Pacific R. R., south of	43	39	47.6	123	18	48.8	8,685

Magnetic declination for quadrangle, 21.2° E.

West along highways near center of quadrangle. (By J. C. Fales in 1917.)

Northeast corner of red barn marked "The Oaks Dairy"	43	39	53.7	123	26	04.4	.....
Road, opposite small gate in mesh and barbed wire fence, at entrance to Crow's house; house is green, roof not painted	43	40	08.84	123	27	02.6	4,543
West end of wagon bridge	43	40	02.2	123	28	11.9	5,136
Fork in road whence steep road leads toward creek, east of main road	43	39	49.0	123	29	18.4	5,066

Magnetic declination for center of quadrangle, 22.41° E.

WASHINGTON.

TRIANGULATION STATIONS.

Connell, Othello, and Riparia quadrangles.

ADAMS, FRANKLIN, GRANT, AND WALLA WALLA COUNTIES.

During the season of 1916 George T. Hawkins extended triangulation eastward from stations Crab and Jackson, described in Bulletin 245.

Beside occupying Crab and Jackson, Mr. Hawkins occupied and relocated Scooten and also occupied 12 primary stations and located three secondary points by intersections, all on approximate North American datum. For other positions in Washington see U. S. Geological Survey Bulletins Nos. 181, 216, 245, 440, 496, 551, and 644, and Part I of the 18th, 20th, and 21st Annual Reports. U. S. Coast and Geodetic Survey Special Pub. Nos. 13 and 31.

CRAB, ADAMS COUNTY, WASH.

The highest peak of the Saddle Mountain Range, east of the Ephrata-White Bluff road. Station is about 8 miles south of Sam Hutchinson's ranch on Crab Creek. Take road from Hutchinson's place to White Bluff, follow this road until summit of Saddle Mountain is reached, then go east along summit to highest point, which is about 10 miles north of White Bluff ferry. Water can be found in Crab Creek 4 miles north.

Signal: A lumber tripod 10 feet high.

Station mark: A bronze triangulation tablet set in stone and placed in ground level with surface.

[Latitude 46° 46′ 31.10″. Longitude 119° 19′ 10.47″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Saddle (2)	99	17	12.86	279	01	52.50	4.4333970	.....
Frenchman	132	33	44.15	312	20	36.00	4.4913920	.....
McManamon	173	35	13.29	353	33	57.80	4.2920014	.....
Jackson	218	11	56.36	38	20	59.03	4.4053183	.....
Mobley	252	58	27.37	73	19	13.88	4.5781338	23.523
Scooten	290	20	26.29	110	31	03.44	4.2968459	12.308
Miller	300	02	34.63	120	22	54.63	4.6153005	25.624

ERHART, FRANKLIN COUNTY, WASH.

In sec. 13, T. 13 N., R. 33 E., on land owned by Curt Erhart, 0.3 mile southwest of his house, 6 feet west of wire fence through center of sec. east and west.

Signal: Sawed-lumber tripod.

Station mark: Bench-mark post set 3.5 feet in the ground.

Reference marks: Nail in top of fence post 12.9 feet west and 6 feet south; nail in top of fence post 6.1 feet east and 6 feet south.

[Latitude 46° 37′ 12.30″. Longitude 118° 36′ 47.88″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Miller	79	20	34.74	259	10	05.65	4.2731073	11.654
McNichols	165	38	42.09	345	37	02.00	4.0713560	7.323
Washtucna	227	25	27.95	47	32	42.91	4.2366091	10.714
Kinney	260	16	08.47	80	24	09.10	4.1543255	8.865

GRAY, ADAMS COUNTY, WASH.

Near south border of sec. 32, T. 16 N., R. 37 E., on land owned by Mr. Gray, on high cultivated knoll about 0.5 mile northwest of Mr. Burkhart's house.

Signal: Sawed lumber.

Station mark: Concrete block 18 by 10 by 10 inches with bronze tablet in top set with top 15 inches below surface.

Reference marks: Nail in top of fence post, 192.8 feet to first post visible on east slope of hill; nail in top of fence post, 188.8 feet to second post to west of first; nail in top of fence post, 205.8 feet to fourth post to west of first.

[Latitude 46° 49′ 39.52″. Longitude 118° 11′ 56.77″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Howard	11	44	44.84	191	42	20.39	4.3164362	12.876
Washtucna	59	00	43.35	238	49	52.50	4.3448806	13.748
Stark	97	08	55.75	277	03	00.18	4.0175146	6.469
Mitchell	207	00	32.53	27	03	25.30	4.0425949	6.854
Hooper	285	01	13.55	105	06	37.01	3.9885243	6.052

HOOPER, ADAMS COUNTY, WASH.

In south half of sec. 8, T. 15 N., R. 38 E., about 4 miles northeast of Hooper, on high grassy hill, 0.25 mile northwest of a house (vacant). Road running northeast from Hooper passes 0.3 mile west of station.

Signal: Sawed lumber tripod.

Station mark: Basalt stone 22 by 10 by 10 inches, set 22 inches in the ground; cross cut on top of stone.

[Latitude 46° 48′ 17.54″. Longitude 118° 04′ 33.16″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Howard	37	34	38.51	217	26	51.11	4.3500081	13.911
Gray	105	06	37.01	285	01	13.55	3.9885243	6.052
Mitchell	160	29	38.36	340	27	07.39	4.1176312	8.147

HOWARD, ADAMS COUNTY, WASH.

In sec. 2, T. 13 N., R. 36 E., on land owned by Mr. Howard and 600 feet southeast of his house, on northeast end of ridge, which breaks off abruptly toward Palouse River. Station is 9 miles southeast of Washtucna and 4.5 miles northwest of Lyons Ferry on Snake River.

Signal: Sawed lumber tripod.

Station mark: Basalt rock 24 by 12 by 10 inches, set 36 inches in the ground, 7 feet south of wire fence. Top of rock is 12 inches below the surface. Cross cut on top.

Reference marks: Nail in second post east 54.4 feet; nail in first post east 25 feet; nail in first post west 11.9 feet; nail in second post west 42.4 feet.

[Latitude 46° 38′ 42.45″. Longitude 118° 15′ 15.13″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Pleasantview School	53	46	42	233	35	28	4.39000	15.253
Kinney	88	24	21.52	268	16	42.28	4.1283412	8.350
Washtucna	121	03	36.78	300	55	11.23	4.2361455	10.703
Stark	164	08	55.30	344	05	24.71	4.3508818	13.939
Gray	191	42	20.39	11	44	44.84	4.3164362	12.876
Hooper	217	26	51.11	37	34	38.51	4.3500081	13.911

JACKSON, DOUGLAS COUNTY, WASH.

On the highest part of a flat ridge about 8 miles south of Wheeler post office and 6 miles west of Petersburg post office. Station is on S. C. Harrison's land and is 0.5 mile west of Oliver Jackson's house.

Signal: A lumber tripod 14 feet high with targets at top.

Station mark: A bronze triangulation tablet, cemented in a stone and placed in ground level with surface under center of signal. (Replaced by iron bench-mark post set by Hawkins in 1916.)

[Latitude 46° 57′ 17.56″. Longitude 119° 06′ 46.82″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Crab	38	20	59.03	218	11	56.36	4.4053183	.....
McManamon	88	29	46.89	268	19	27.84	4.2533409	.....
Lewis	145	20	58.57	325	10	14.06	4.5130523	.....
Wheeler	187	48	17.09	7	50	22.96	4.4256706	.....
Mobley	293	38	41.00	113	50	26.22	4.3487439	13.871
Scooten	354	05	57.90	174	07	33.28	4.4316730	16.789

KINNEY, FRANKLIN COUNTY, WASH.

On high grassy hill 6 feet west and 34 feet south of center of sec. 4, T. 13 N., R. 35 E., on land owned by Honus Harder, who lives at east end of Washtucna Lake.

Signal: Sawed-lumber tripod.

Station mark: Bench-mark post set 3 feet in ground.

[Latitude 46° 38′ 29.86″. Longitude 118° 25′ 46.73″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Pleasantview School	24	08	12	204	04	36	4.19035	9.631
Erhart	80	24	09.10	260	16	08.47	4.1543255	8.865
Washtucna	171	44	54.70	351	44	08.70	3.9710179	5.813
Howard	268	16	42.28	88	24	21.52	4.1283412	8.350

LIND, ADAMS COUNTY, WASH.

About 7 miles southeast of Lind, in sec. 18, T. 16 N., R. 34 E., about 0.5 mile northwest of house rented by Mr. Fitzpatrick.

Station is 1,314 feet south of east and west wire fence and 1,013 feet east of north and south wire fence where road goes through.

Signal: Sawed lumber.

Station mark: Concrete block 20 by 8 by 8 inches set with top 14 inches below surface of ground.

[Latitude 46° 52′ 46.27″. Longitude 118° 35′ 04.12″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McNichols	16 23 39.93	196 20 43.99	4.2590993	11.284
Mobley	88 20 01.92	268 08 37.95	4.2978261	12.336
Schoolhouse	125 19 21	305 15 02	3.96344	5.712
Stark	283 08 04.85	103 19 01.45	4.2918245	12.167
Washtucna	328 34 47.95	148 40 48.20	4.3038500	12.508

McNICHOLS, FRANKLIN COUNTY, WASH. (Not occupied.)

In southeast corner of sec. 3, T. 14 N., R. 33 E., on land owned by Mr. McNichols. Signal is not on highest part of hill, as objection was made to building in wheat field.

Signal: Windmill tower.

Station mark: Center of well.

[Latitude 46° 43′ 22.04″. Longitude 118° 39′ 05.47″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Miller	46 08 47.78	225 59 58.22	4.3323796	13.358
Scooten	88 15 32.38	267 56 58.13	4.5122095	20.210
Mobley	138 48 06.80	318 39 39.64	4.3496434	13.899
Lind	196 20 43.99	16 23 39.93	4.2590993	11.284
Washtucna	269 03 43.41	89 12 38.91	4.1937170	9.707
Erhart	345 37 02.00	165 38 42.09	4.0713560	7.323

MILLER, FRANKLIN COUNTY, WASH.

Station is 1,050 feet south and 1,140 feet east of corner of secs. 24, 25, 19, and 30, T. 13 N., Rs. 31 and 32 E., on highest part of hill, in cultivated field owned by Mr. Miller, a banker from Connell.

Signal: Sawed-lumber tripod.

Station mark: Bench-mark post set 3.5 feet in ground.

[Latitude 46° 35′ 19.07″. Longitude 118° 51′ 13.64″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Crab	120 22 54.63	300 02 34.63	4.6153005	25.624
Scooten	129 07 19.70	308 57 36.20	4.3417998	13.651
Church spire	155 55 29	335 51 41	4.21278	10.142
Mobley	181 14 24.16	1 14 47.78	4.5015236	19.718
McNichols	225 59 58.22	46 08 47.78	4.3323796	13.358
Erhart	259 10 05.65	79 20 34.74	4.2731073	11.654

MITCHELL, ADAMS COUNTY, WASH.

Station is two miles northwest of Benge, near center of sec. 4, T. 16 N., R. 7 E., on knoll in field owned by Mr. Mitchell and 0.3 mile east of his house.

Signal: Sawed lumber.

Station mark: Stone 26 by 10 by 12 inches, set 36 inches in the ground; cross on top. Top of stone is 10 inches below surface.

Reference mark: Station is 478.5 feet north of east-west wire fence; station is 1,122.0 feet west of north-south wire fence where it crosses the hill (south gate post).

[Latitude 46° 54′ 57.70″. Longitude 118° 08′ 00.04″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gray	27 03 25.30	207 00 32.53	4.0425949	6.854
Stark	60 57 57.62	240 49 09.00	4.2443479	10.907
Hooper	340 27 07.39	160 29 38.36	4.1176312	8.147

MOBLEY, ADAMS COUNTY, WASH.

Station is 50 feet south of the center of sec. 18, T. 16 N., R. 32 E., and 6 feet east of north-south wire fence through middle of sec. 18. On land owned by Mr. Mobley, who lives at northeast corner of sec. 18.

Signal: Sawed-lumber tripod with targets.

Station mark: Bench-mark post 3 feet in ground.

[Latitude 46° 52′ 26.51″. Longitude 118° 50′ 41.21″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Miller	1 14 47.78	181 14 24.16	4.5015236	19.718
Scooten	44 47 22.02	224 37 13.51	4.4008747	15.640
Jackson	113 50 26.22	293 38 41.00	4.3487439	13.871
Schoolhouse	244 17 37	64 24 42	4.13604	8.500
Lind	268 08 37.95	88 20 01.92	4.2978261	12.336
McNichols	318 39 39.64	138 48 06.80	4.3496434	13.899

PLEASANTVIEW SCHOOLHOUSE, WALLA WALLA COUNTY, WASH. (Not occupied.)

In sec. 19 (?), T. 12 N., R. 35 E. A white schoolhouse on prominent hill, about 7 miles west and 1 mile north of Pleasantview.

Station mark and signal: Chimney of schoolhouse.

[Latitude 46° 30′ 51.6″. Longitude 118° 30′ 44.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Kinney	204 04 36	24 08 12	4.19035	9.631
Howard	233 35 28	53 46 42	4.39000	15.253

SCOOTEN, FRANKLIN COUNTY, WASH.

On a prominent butte about 2.5 miles east of Scooten Springs. Take road from Scooten Springs past the corral to top of hill, then left-hand road, which passes to left of signal.

Signal: A tripod made of lumber.

Station mark: A bronze triangulation tablet cemented in a rock and placed in ground level with surface.

[Latitude 46° 42′ 47.19″. Longitude 119° 04′ 36.04″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Crab	110 31 03.44	290 20 26.59	4.2968459	12.308
Jackson	174 07 33.28	354 05 57.90	4.4316730	16.789
Mobley	224 37 13.51	44 47 22.02	4.4008747	15.640
Church spire	264 06 51	84 12 47	4.01857	6.485
McNichols	267 56 58.13	88 15 32.38	4.5122095	20.210
Miller	308 57 36.20	129 07 19.70	4.3417998	13.651

STARK, ADAMS COUNTY, WASH.

Station is in sec. 30, T. 16 N., R. 36 E., on highest part of a hill, on farm owned by Mr. Stark, about 400 feet southeast of his house, and just south of small orchard.

Signal: Sawed lumber.

Station mark: Concrete block 18 by 10 by 10 inches, having bronze tablet in top and set with top 12 inches below surface.

Reference marks: Nail in apple tree north, 44 feet distant; nail in apple tree northwest, 67 feet distant.

[Latitude 46° 50′ 21.19″. Longitude 118° 20′ 04.28″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Washtucna	34	08	46.29	214	03	50.65	4.1860371	9.536
Lind	103	19	01.45	283	08	04.85	4.2918245	12.167
Mitchell	240	49	09.00	60	57	57.62	4.2443479	10.907
Gray	277	03	00.18	97	08	55.75	4.0175146	6.469
Howard	344	05	24.71	164	08	55.30	4.3508818	13.939

WASHTUCNA, FRANKLIN COUNTY, WASH.

Station is about 7 miles west and 2 miles south of Washtucna, in sec. 5, T. 14 N., R. 35 E., on high cultivated hill 0.5 mile southwest of ranch house.

Signal: Sawed-lumber tripod.

Station mark: Bench-mark post set 2.5 feet in ground.

[Latitude 46° 43′ 29.66″. Longitude 118° 26′ 49.95″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Erhart	47	32	42.91	227	25	27.95	4.2366091	10.714
McNichols	89	12	38.91	269	03	43.41	4.1937190	9.707
Lind	148	40	48.20	328	34	47.95	4.3038500	12.508
Stark	214	03	50.65	34	08	46.29	4.1860371	9.536
Gray	238	49	52.50	59	00	43.35	4.3448806	13.748
Howard	300	55	11.23	121	03	36.78	4.2361455	10.703
Kinney	351	44	08.70	171	44	54.70	3.9710179	5.813

WHITE CHURCH, FRANKLIN COUNTY, WASH. (Not occupied.)

(Sighted from two stations only; position doubtful.)

On big flat about 3 miles west and 2.5 miles north of Connell.

Station mark and signal: Spire of church.

[Latitude 46° 43′ 21.6″. Longitude 118° 56′ 27.2″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Scooten	84	12	47	264	06	51	4.01857	6.485
Miller	335	51	41	155	55	29	4.21278	10.142

WHITE SCHOOLHOUSE, ADAMS COUNTY, WASH. (Not occupied.)

(Sighted from two stations; position doubtful.)

In sec. 4 (?), T. 16 N., R. 33 E., on high ground and at southwest corner of cross-roads 5 miles southwest of Lind.

Station mark and signal: Chimney on schoolhouse.

[Latitude 46° 55′ 38.2″. Longitude 118° 40′ 58.6″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mobley	64 24 42	244 17 37	4.13604	8.500
Lind	305 15 02	125 19 21	3.96344	5.712

PRIMARY TRAVERSE.

Chehalis, Eatonville, Mount St. Helens, Mount Rainier, and Tacoma quadrangles.

LEWIS AND PIERCE COUNTIES.

The following positions on North American datum were determined by Geo. T. Hawkins in 1916. They are based on Primary Traverse Station No. 6, of 1910, in the Tacoma quadrangle and on Primary Traverse Station No. 48, of 1912, in Chehalis quadrangle.

CHEHALIS QUADRANGLE.

West along highways in southeast part of quadrangle. (By G. T. Hawkins in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Mossy Rock, 1 mile west of, elbow in road east and north	46 31 46.3	122 30 19.6	.....
Mossy Rock, 1 mile west of, elbow in road west and south	46 31 59.2	122 30 18.8	1,310
Mossy Rock, 3 miles west of, on south side of east and west road, 60 feet north of house; iron post stamped "Prim. Trav. Sta. No. 2, 1912," also "E. 576"	46 31 58.8	122 31 55.2	6,737
Mayfield, on south side of store building, 150 feet southeast of east end of new iron bridge; iron post stamped "Prim. Trav. Sta. No. 1, 1912"	46 30 33.9	122 34 04.3	12,470
Silver Creek, at northeast corner of T road north; iron post stamped "Prim. Trav. Sta. No. 48, 1912" (Elev. 678)	46 31 32.2	122 35 21.2	8,000
Silver Creek, 800 feet southeast of store and post office, 30 feet east by 25 feet south to center of crossroads, 5 feet north by 5 feet east to corner fence post; iron post stamped "Prim. Trav. Sta. No. 48, Wash. 1912"	46 31 32.7	122 35 20.8	.....

EATONVILLE QUADRANGLE.

West along highways near south border of quadrangle. (By G. T. Hawkins in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Riffe, 1 mile east of road, opposite rock crusher	46	30	51.3	122	21	27.0	.....
Riffe, 30 feet northeast to blacksmith shop; iron post stamped "Prim. Trav. Sta. No. 5B"	46	30	52.5	122	22	33.8	4,677
Riffe, 1.75 miles west of, opposite entrance to two-story frame house	46	31	20.2	122	24	26.0	8,328
Richland schoolhouse; iron post stamped "El. 793," also "Prim. Trav. Sta. No. 4B"	46	30	55.1	122	26	00.7	7,100
Richland schoolhouse, 0.75 mile west of, T road south, 40 feet southwest to milk platform	46	31	03.8	122	26	56.9	4,026
Mossy Rock, 200 feet northeast to post office; iron post stamped "El. 668," also "Prim. Trav. Sta. No. 3B"	46	31	47.6	122	28	55.6	9,414
Mossy Rock, 1 mile west of, elbow in road east and north (duplicated on Chehalis quadrangle)	46	31	46.3	122	30	19.6	5,876
Kosmos, 2 miles northeast of, second-class road north	46	30	22.6	122	10	12.6	.....
Kosmos, 3.5 miles northeast of, forks at high school	46	31	06.5	122	09	19.0	5,817
Kosmos, 4.5 miles northeast of, opposite old store	46	31	22.8	122	08	31.1	4,280
Coleman & Harlson's store, road opposite	46	32	28.7	122	07	01.0	8,471
Coleman & Harlson's store, 1.5 miles east of, second-class road south in front of house	46	32	35.3	122	05	30.9	6,331
Two-story unpainted house, road opposite	46	32	52.2	122	04	41.0	3,889
New schoolhouse, road opposite, 60 feet north to flagpole	46	32	51.6	122	04	04.6	2,540
Second-class fork north to C. F. Burnett's house	46	32	38.0	122	02	52.7	5,213
Dead snag, at northeast corner of old field, blaze on side next to road with nail in center	46	32	27.8	122	02	24.1	2,251
Second-class fork to south	46	32	03.0	122	00	46.7	7,252
Wooden bridge over large creek, east end of (duplicated on Mount Rainier quadrangle)	46	32	17.1	121	59	49.5	4,244

South along Chicago, Milwaukee & St. Paul Ry. to Morton.

Tanwax Junction, railroad crossing 400 feet southeast of	46	59	56.6	122	14	21.9	.....
Kapowsin, crossroads 0.3 mile west of	46	59	07.6	122	14	02.3	5,137
Railroad, in front of station (no name)	46	57	03.7	122	14	11.9	12,580
Holt station, railroad in front of	46	56	36.7	122	15	05.3	4,604
Railroad crossing near white schoolhouse	46	55	36.5	122	15	28.8	6,323
Clay City, headblock at	46	55	02.6	122	15	08.4	3,710
Ohop, railroad in front of station	46	54	26.6	122	15	35.8	4,115
Railroad, opposite sign "Station, 1 mile"	46	53	55.9	122	16	19.7	4,355
Railroad crossing near saw mill, two-story house 200 feet west	46	53	00.1	122	15	47.5	6,080
Eatonville, 50 feet north of station, 15 feet south of tank; iron post stamped "El. 800," also "Prim. Trav. Sta. No. 1, 1916"	46	51	57.4	122	15	38.7	6,390
Railroad, opposite milepost 67	46	51	12.9	122	17	06.6	7,593
Milepost 35 (marked on tie)	46	50	59.3	122	18	08.6	4,520
Railroad, opposite sign "Station one mile"	46	50	43.2	122	18	38.6	2,651
Legrande, automobile road crossing railroad	46	50	04.4	122	19	06.4	4,375
Milepost 38 (marked on tie)	46	49	22.7	122	18	06.4	5,943
U. S. B. M.; marked on rock in place, "El. 1,007"	46	49	10.6	122	18	08.0	1,230
Railroad, opposite milepost 39	46	48	34.0	122	18	02.9	3,723
Railroad, opposite station at headworks	46	47	52.5	122	18	22.4	4,416
Alder, 12 feet south of railroad, 70 feet southwest of station; iron post stamped "El. 1, 148" and "Prim. Trav. Sta. No. 2, 1916"	46	47	45.7	122	17	00.2	5,763
Railroad, opposite sign "Station one mile"	46	47	08.8	122	16	12.3	5,009
Log siding, headblock	46	46	34 4	122	15	54.6	3,691
Reliance station sign, railroad opposite	46	46	25 9	122	15	37.1	1,497
Milepost 44 (marked on tie)	46	46	44.5	122	14	53.7	3,560
Water tank, railroad opposite	46	46	50 6	122	14	00.7	3,740
Williamson, crossing 0.25 mile east of	46	46	10.9	122	12	15.9	8,327
Elbe, 2 feet north of crossing post near station; iron post stamped "El. 1,210, 1910" and "Prim. Trav. Sta. No. 3, 1916"	46	45	54.8	122	11	35.9	3,230
Elbe, in east part of; crossing of automobile road and railroad	46	45	52.2	122	11	11.0	1,749
Elbe, 1 mile east of; crossing	46	45	48.0	122	10	02.8	4,771
Park Junction, 0.3 mile south of, crossing of automobile road and railroad	46	45	21.9	122	08	20.8	.....
Park Junction, 0.3 mile south of, crossing of automobile road and railroad; iron post 65 feet southeast of, stamped "Prim. Trav. Sta. No. 4, 1916" and "El. 1,336"	46	45	21.4	122	08	20.2	64
Milepost 51 (marked on tie)	46	44	32.8	122	08	28.3	4,950
Railroad, opposite old station (no name)	46	44	04.9	122	08	41.7	2,987
Railroad, opposite loading platform	46	43	31.8	122	09	14.0	4,035
Mineral, 20 feet east of railroad, 50 feet northeast of station; iron post stamped "El. 1,439" and "Prim. Trav. Sta. No. 5, 1916"	46	42	59.9	122	10	30.0	6,203
Mineral, 1.5 miles southwest of, second-class crossing	46	42	20.8	122	11	38.5	6,205
Watkins station, railroad opposite	46	41	25.7	122	11	38.5	5,581
Log siding, headblock	46	40	04.9	122	11	35.0	8,195

EATONVILLE QUADRANGLE—Continued.

South along Chicago, Milwaukee & St. Paul Ry. to Morton—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Cowlitz Junction, 1,200 feet north of headblock, 8 feet west of railroad; iron post stamped "E. 1,636" and "Prim. Trav. Sta. No. 6, 1916"	46	38	41.7	122	12	07.9	8,738
Cowlitz Junction, 1.5 miles southwest of, on west side of railroad; iron post stamped "E 1,475"	46	37	33.3	122	12	38.5	7,248
Milepost 62 (marked on tie)	46	36	53.5	122	13	15.0	4,771
Inland, railroad opposite tank at	46	35	58.7	122	13	28.9	5,636
Luidberg post office, railroad opposite	46	35	17.9	122	14	30.6	5,970
Luidberg, 0.75 mile southwest of, crossing over railroad	46	34	46.2	122	14	59.6	3,800
Morton station, railroad opposite	46	33	40.1	122	16	27.2	9,069
Along highways south from Morton.							
Morton, 1 mile southeast of, forks at sawmill	46	33	20.6	122	15	42.9	3,674
Morton, 3 miles southeast of forks, 100 feet east to two-story house	46	32	14.5	122	13	48.9	10,410
Forks at south end of straight road across valley	46	31	35.3	122	13	49.3	3,970
Forks on top of hill	46	30	58.2	122	12	48.6	5,669
Forks of plank road and gravel road	46	30	24.6	122	11	38.1	5,991
Along highways.							
Automobile road opposite circular saw sign, "Mountain 5 Tacoma 50", 150 feet south to large log house	46	45	37.1	122	00	42.6	.....
Ashford, 100 feet west of post office, in southwest corner of forks; iron post stamped "E. 1, 771"	46	45	33.7	122	01	51.0	4,770
Along Chicago, Milwaukee & St. Paul Ry.							
Railroad, opposite north side of station, at log road junction	46	45	51.8	122	03	21.8	6,583
National station, railroad opposite northwest corner of	46	45	31.2	122	04	13.9	4,192
Railroad, opposite station (no name)	46	45	23.1	122	06	22.1	8,963

MOUNT RAINIER QUADRANGLE.

East along highways. (By G. T. Hawkins in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Randal, 2.5 miles west of, east end of wooden bridge	46	32	17.1	121	59	49.5	.....
Randal, 1 mile west of, second-class road southwest at edge of big bottom 180 feet southwest to house	46	32	13.0	121	58	28.1	5,709
Randal, T road south at, 400 feet south to iron bridge	46	32	11.1	121	57	21.9	4,630
Randal, east part of, 10 feet north of road, 50 feet north to house, 100 feet southeast to silo, in rock in place; tablet stamped "Prim. Trav. Sta. No. 8, 1916"	46	32	10.5	121	57	16.9	354
Randal, 1.5 miles east of, second-class road south at house	46	32	16.4	121	55	37.2	7,000
Randal, 2 miles northeast of, east end of iron bridge	46	32	25.7	121	54	59.8	2,780
T road south, 300 feet southeast to house	46	32	30.5	121	54	24.8	2,488
Road, opposite yard gate with arch over top	46	32	33.2	121	52	54.3	6,336
Road, opposite blacksmith shop	46	32	03.0	121	50	21.2	11,130
Road, opposite long straight wire fence south	46	32	13.0	121	49	11.5	4,794
Hop dryhouse, forks 70 feet east of	46	31	56.9	121	48	35.5	3,002
Cora Ferry, 90 feet northeast of Wm. Mullen's house, in solid rock; tablet stamped "Prim. Trav. Sta. No. 9, 1916"	46	32	12.1	121	47	32.3	4,682
Painted house on north side of road; road opposite	46	31	59.2	121	46	06.5	6,138
Large creek northwest; middle of bridge over	46	32	35.6	121	45	25.6	4,667
Road, opposite gate, 30 feet northeast to mail box	46	33	12.1	121	43	50.8	7,582
Road, opposite two-story house on west side of road	46	33	40.4	121	43	18.4	3,658
Wessel Ferry, road opposite	46	34	02.7	121	43	06.8	2,410
Large creek northwest, middle of bridge over	46	34	29.3	121	42	04.6	5,112
Road, opposite house on west side of, near junction of large creek with Cowlitz River	46	34	46.9	121	41	22.7	3,425

MOUNT RAINIER QUADRANGLE—Continued.

East along highways—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road, opposite D. W. Collin's house	46 35 47.9	121 40 46.9	6,675
Lewis, opposite post office road	46 36 25.4	121 40 12.2	4,504
Lewis, 0.5 mile northeast of, in top of large rock near road forks, tablet stamped "Prim. Trav. Sta. No. 10, 1916"	46 36 47.3	121 40 00.7	2,366
Cowlitz River, government bridge over; south end of	46 37 17.4	121 39 42.6	3,302
Triangle cut on north side of fir tree, on south side of trail, 400 feet south to small clearing	46 37 45.4	121 41 30.2	8,027
Triangle cut on east side of fir tree, on west side of trail	46 38 05.5	121 42 18.9	3,965
Triangle cut on north side of fir tree, on south side of trial	46 38 35.4	121 42 42.6	3,460
Triangle cut on north side of fir tree, on west side of trail	46 39 26.4	121 43 18.5	5,741
Swinging sign, "Creek Claras"	46 39 39.5	121 43 18.4	1,327
Triangle cut on west side of fir tree, on east side of trail	46 39 55.2	121 43 50.9	2,773
Triangle cut on south side of fir tree, on north side of trail	46 40 32.0	121 44 59.4	6,070
Skate Creek, foot bridge over	46 40 55.6	121 45 51.0	4,314
Triangle cut on south side of fir tree, on north side of trail	46 40 58.6	121 46 00.5	735
Triangle cut on north side of fir tree, on south side of trail	46 41 13.9	121 47 16.6	5,525
Triangle cut on north side of fir tree, on south side of trail	46 42 08.8	121 48 32.8	7,695
Ranger's cabin, trail opposite	46 42 43.6	121 48 57.3	3,926
Trail, fork leading to Lookout Mountain	46 43 11.8	121 49 21.4	3,311
Triangle cut on west side of alder tree, on east side of trail	46 43 32.9	121 49 31.9	2,265
Bear Prairie, point on automobile road in Rainier Park	46 43 56.5	121 50 13.0	3,738
Automobile road, opposite milepost 3.9	46 44 07.6	121 50 50.9	2,865
Automobile road, opposite Henry trail to north	46 44 12.5	121 51 23.0	2,300
Automobile road, opposite milepost 3	46 44 09.8	121 51 54.2	2,193
Bench-mark tablet, stamped "El. 2275," also "Prim. Trav. Sta. No. 13, 1916"	46 44 04.9	121 52 21.5	1,965
Automobile road, opposite milepost 2	46 44 26.3	121 52 51.6	3,013
Automobile road, opposite milepost 1	46 44 33.7	121 53 53.0	4,342
Mount Rainier Park, at entrance, 1 foot south of flagpole; iron post stamped "E. 2,003"	46 44 30.2	121 55 01.5	4,787
Automobile road, opposite schoolhouse No. 98	46 45 04.5	121 56 02.1	5,465
Automobile road, wooden bridge over creek south	46 45 20.5	121 57 38.7	6,925
Automobile road, fork to south, 20 feet southeast to sign on circular saw "U. S. Forest Reserve"	46 45 28.3	121 58 50.5	5,062

MOUNT ST. HELENS QUADRANGLE.

West along highways near north border of quadrangle. (By G. T. Hawkins in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Kosmos, 0.75 mile northeast of, T road north, 40 feet northwest to sign, reads "Morton 6.8 miles, Mineral 19.8 miles"	46 29 53.8	122 11 14.9	.....
Kosmos, 130 feet southeast of; iron post stamped "752" also "Prim. Trav. Sta. No. 7, 1916"	46 29 40.0	122 11 52.7	2,995
Kosmos, 1.5 miles southwest of, second-class road south leading to old house and camp ground	46 28 49.3	122 12 31.2	5,778
Cowlitz River, near old ferry on; iron post stamped "628.4"	46 28 33.6	122 14 38.3	9,033
Cowlitz River, iron bridge over; north end of	46 28 52.8	122 16 31.7	8,171
Wooden bridge	46 28 28.6	122 17 23.8	4,393
Wooden bridge	46 28 31.6	122 17 43.5	1,421
Road, opposite painted elevation (633)	46 28 51.9	122 18 17.8	3,151
Old sawmill, east end of bridge near	46 29 06.4	122 19 29.8	5,255
Riffe, 3 miles east of, in school yard; iron post stamped "E. 573"	46 29 32.9	122 20 02.2	3,507

TACOMA QUADRANGLE.

From Primary Traverse station No. 6 along highways about 10 miles south, thence along railroad to Morton.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Orting, 150 feet west of water tank, 34.2 feet from center of track, on south side, 3 feet west of telegraph pole, 53 feet west of center line of Bridge Street; iron post stamped "Prim. Trav. Sta. No. 6, 1910, Wash. 198T"	47 05 47.3	122 12 04.8	.....
Orting, about 2 miles southwest of, opposite cemetery gate; road	47 04 45.4	122 13 49.8	9,598
Orting, about 3.5 miles southwest of; crossroads, 150 feet southwest to old house	47 04 05.5	122 15 04.0	6,538
Orting, about 4 miles southwest of, road at quarter corner	47 03 37.7	122 15 06.4	2,825
Orting, about 5 miles southwest of, T road west at quarter corner	47 02 46.0	122 15 07.4	5,241
Orting, about 5.5 miles southwest of, section corner, 30 feet west to corner of fence	47 02 19.4	122 15 08.3	2,690
Fence line east and west; road opposite	47 00 48.0	122 14 43.8	9,416

Dungeness, Lake Crescent, Mount Olympus, Port Angeles, Port Crescent, and Pysht quadrangles.

CLALLAM COUNTY.

The following geographic positions, on North American datum, were determined in 1917 by C. F. Urquhart.

The traverse lines were tied to the following stations of the U. S. Coast and Geodetic Survey: Twin, Ediz Hook Lighthouse, Dungeness Lighthouse, Dode, Pillow Point, and Slip Point.

DUNGENESS QUADRANGLE.

Along highways and sand spit. (By C. F. Urquhart in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Station 88, on railroad, east of Reeveton	48 06 20.4	123 14 58.4	.....
Reeveton station, about 450 feet east of, 30 feet south of railroad crossing; iron post stamped "Prim. Trav. Sta. No. 14, 160, 1917"	48 06 20.0	123 14 56.5	132
McDonald Creek bridge; east end of	48 06 20.3	123 13 11.2	7,146
Road south	48 06 20.6	123 11 57.6	5,000
Opposite D. L. Stewart's residence	48 06 20.7	123 11 13.5	3,000
Road turns north, 14-mile signpost	48 06 20.2	123 09 59.5	5,010
Road turns east to Dungeness	48 07 51.6	123 09 55.3	9,265
Dungeness Lighthouse, 5.80 miles west of, old Port Angeles–Dungeness road crossing, 10 feet south of road, 30 feet east of railroad; iron post stamped "Prim. Trav. Sta. No. 16, 121, 1917"	48 08 03.0	123 10 08.8	1,475
U. S. Coast and Geodetic Survey triangulation station, not described and no position given	48 10 25.1	123 09 00.7	15,116
Dungeness Lighthouse, U. S. Coast and Geodetic Survey triangulation station	48 10 55.9	123 06 33.6	10,447
Opposite Mr. McHonheimer's residence	48 00 56.4	123 13 06.2	3,705
McDonald Creek hill; summit	48 01 27.4	123 13 38.0	3,816
McDonald Creek bridge; east end	48 01 26.3	123 13 44.1	429
Summit of hill	48 01 34.5	123 13 56.3	1,170
Between gate on south and old barn on north side of road	48 01 43.4	123 14 15.3	1,576
Point where trail leaves road to south	48 01 43.8	123 14 43.2	1,898

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DUNGENESS QUADRANGLE—Continued.

From station 93 opposite L. D. Stewart's residence on Port Angeles and Dungeness Road along highway to Carlsborg, thence southwest and north to station 87 on east side of a gravel pit.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Station 93, opposite L. D. Stewart's residence, in road	48	06	20.7	123	11	13.3	.....
Reeveton, 3.55 miles east of, 6.10 miles southwest of Dungeness, on north side of road, at T-road south to Carlsborg; iron post stamped "Prim. Trav. Sta. No. 15, 125, 1917"	48	06	20.6	123	10	19.2	3,678
Railroad crossing	48	05	38.3	123	10	19.3	4,278
Road crossing	48	05	14.8	123	10	19.2	2,382
Crossing on logging railroad	48	04	44.1	123	10	17.0	3,122
Opposite Lucos S. Kociliah's mailbox	48	04	22.8	123	10	14.9	2,164
Section line	48	04	09.7	123	10	25.0	1,491
Road crossing	48	02	50.5	123	10	39.2	8,083
Road crossing; Prim. Trav. Sta. No. 17	48	02	50.4	123	10	39.0	16
Opposite Bear Creek School, district 48	48	02	44.9	123	10	00.9	2,652
Road east to Sequim	48	02	21.1	123	09	21.2	3,619
District school, west of road, 430 feet, azimuth 200°, from bridge	48	01	21.6	123	09	52.6	6,392
Bridge	48	01	07.5	123	10	00.2	1,519
Slab camp and Deer Park trail leaves main road; tablet set in boulder, stamped "Prim. Trav. Sta. No. 18"	48	00	36.7	123	10	17.5	3,340
Creek crossing	48	01	02.6	123	12	12.5	8,252

Magnetic declination in southwest part of quadrangle, 24.3° E.

LAKE CRESCENT QUADRANGLE.

South along highways near east border of quadrangle. (By C. F. Urquhart in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Big Whiskey Creek, 1,314 feet west of Little Whiskey Creek	48	08	01.1	123	45	55.6	.....
New bridge, 115 feet long, east end	48	07	01.1	123	46	45.1	4,601
Bridge	48	07	09.0	123	47	08.2	2,649
Point not described, 170 feet north-northeast of Prim. Trav. Sta. No. 7	48	06	24.3	123	47	10.1	4,529
Piedmont, 1.1 miles north of, east side of summit of road, opposite Sulphur Springs trail; iron post stamped (?) "Prim. Trav. Sta. No. 7, 910, 1917"	48	06	22.7	123	47	10.6	170
Piedmont ferries road fork to ferries and East Beach, 150 feet northwest of creek	48	05	45.8	123	47	25.9	3,881

West along Seattle, Port Angeles & Western R. R. through center of quadrangle.

Water tank, 300 feet east of center of bridge	48	08	22.5	123	45	34.4	.....
Hilda, at station, 275 feet west of west end of bridge P. A. 176, 260 feet long, 110 feet east of logging-road spur	48	08	26.0	123	47	11.9	6,625
Railroad station (no name given), 2,370 feet west of a private-road crossing	48	08	30.1	123	48	34.9	5,645
Railroad crossing, 1,385 feet west of center of bridge, P. A. 178	48	08	35.8	123	49	15.0	2,780
Joyce, 4.5 miles west of, about 75 feet south of Lyre School, near flagpole; iron post stamped "Prim. Trav. Sta. No. 48, 186, 1917"	48	08	38.7	123	49	43.2	1,934
Lyre Creek, north side of, opposite section house	48	08	35.8	123	50	00.5	1,206
Shadow station signboard	48	08	53 6	123	51	40 7	7,034
Majestic station, signboard	48	09	13.2	123	52	16.1	3,112
Majestic, 1.06 miles west of, P. T. b. m. No. 49 (not described and not recovered by levelman)	48	09	21.4	123	53	37.3	5,569
Bridge No. 680, east end of	48	09	31.6	123	54	17.2	2,897
Railroad span	48	09	33.3	123	55	18.4	4,150
Junction of road north to Twin triangulation station	48	09	35.0	123	56	08.7	3,415
Twin triangulation station, on sharp ridge east of Twin Rivers, 50 feet above water and about 80 meters from nearest stream, 3 meters back from edge of bluff, and 5 feet lower than top of ridge in front of it. Center marked by a §-inch hole, drilled 2 inches deep in a stone buried 18 inches beneath surface. Ridge broken down in 1908, center found 15 inches below surface of ground and about 2 feet from perpendicular edge of cliff. Reference marks: Copper tack in top of 7-inch alder stump standing 4 feet high bearing S. 77° W. (mag.), and distant 14.042 meters; copper tack in a 5-inch alder stump standing 5 feet high, back at right angles from line of bluff, bearing S. 7° 45′ W. (mag.) and 4.632 meters distant (U. S. C. & G. S. station)	48	09	58.78	123	56	39.82	3,274
NOTE—Station mark has been washed out but two reference stumps remain.							

LAKE CRESCENT QUADRANGLE—Continued.

West along Seattle, Port Angeles & Western R. R. through center of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Twin Rivers, about 300 feet east of station, 50 feet east of Pool Hall, 30 feet north of track; iron post stamped "Prim. Trav. Sta. No. 50, 159, 1917"	48	09	34.1	123	56	42.5	.....
West Twin Creek, east end of trestle 535 feet long over	48	09	03.7	123	56	49.6	3,115
Point 220 feet west-southwest from Prim. Trav. Sta. No. 51	48	09	46.2	123	58	23.5	7,013
Twin Rivers, 2.5 miles west of, 175 feet east of bridge, 270 feet west of west end of switch, 52 feet north of railroad, near telephone booth; iron post stamped "Prim. Trav. Sta. No. 51, 231, 1917"	48	09	47.1	123	58	26.5	220

Magnetic declination near east border of quadrangle, 24.6° E.; through center of quadrangle, 24.8° E.

Secondary triangulation on Crescent Lake based upon unchecked primary traverse position for station Mitchell. (By C. F. Urquhart in 1917.)

NOTE.—Nearly all stations are marked by triangulation tablets set in rock. Tablets are not stamped.

Station 331, adjusted position	48	05	45.81	123	47	25.91	.....
Mitchell, iron post	48	05	36.22	123	47	26.24	972
Saratoga, in rough rocks near Saratoga Point; tablet set in boulder	48	05	23.67	123	45	23.71	8,414.9
East Beach (not occupied); chimney on building, probably hotel	48	05	10.63	123	44	31.14	3,806.5
East Beach, on beach, at about the first point visible from East Beach; tablet set in rock	48	04	36.66	123	46	04.77	7,229.9
West Beach, on beach; cross on rock	48	04	34.30	123	46	09.64	407.8
East Sledge, at rocky point, 560 feet north of Sledge Hammer Point; tablet set in rock	48	04	26.44	123	46	21.35	1,125.6
Sledge, at point locally known as Sledge Hammer Point; tablet set in rock	48	04	21.25	123	46	24.18	560.2
Storm, on beach, 1,828 feet south of Sledge Hammer Point; tablet set in rock	48	04	04.17	123	46	32.83	1,828.2
Hatchery (not occupied); derrick	48	03	30.32	123	47	07.50	4,160.9
Barnes, at point locally known as Barnes Point; tablet set in rock. Not found 1918	48	03	41.49	123	47	42.55	2,636.2
Maple, at Maple Point; tablet set in rock	48	03	10.19	123	49	32.98	8,145.4
Pancake, on beach at point locally known as Pancake; tablet set in rock	48	03	12.70	123	52	02.50	10,161.8
Madrona, on beach at point locally known as Madrona Point; tablet set in rock	48	03	35.32	123	53	03.29	4,722.7
Eagle, at point locally known as Eagle Point; tablet set in rock	48	03	42.78	123	53	50.44	3,291.4
Bowlder, on beach, at point 1,013 feet from West Base; tablet set in rock	48	04	00.35	123	54	44.28	4,067.5
Fairholm, West Base, in northeast corner of concrete wall of spring; nail	48	04	07.27	123	54	55.05	1,013.2
East Base, on rock set in ground; cross mark in triangle	48	04	14.84	123	54	38.69	1,350.1
Thompson, near east side of Mr. Thompson's lawn; tablet in rock	48	04	06.21	123	53	59.80	2,782.8
East Thompson, on beach, 502 feet east of Thompson; cross on rock placed in ground	48	04	04.80	123	53	52.71	502.0
Grubb, on beach west of Mr. Grubb's landing; tablet in rock	48	03	54.40	123	52	37.51	5,215.3
Cedar, on beach, between Grubbs landing and Maple Point; tablet set in rock	48	03	53.83	123	52	15.84	1,473.1
Neagle, on beach, at point locally known as Neagle's Point; tablet set in rock	48	03	54.23	123	50	40.44	6,480.2
Bluff E, at west side of bluff; tablet set in rock	48	03	50.44	123	48	20.81	9,492.4
Bluff D, 1,875 feet northeast of Bluff E; cross on rock	48	03	51.06	123	48	18.22	187.5
Bluff C, on beach, 2,202 feet from Bluff D; tablet in rock	48	04	00.93	123	47	49.34	2,201.9
Bluff B, on beach, 604 feet from Bluff C; tablet set in rock	48	04	04.24	123	47	41.94	603.8
Bluff A, on beach, 481 feet from Bluff B; cross on rock	48	04	07.38	123	47	36.65	480.8
Bluff, 284 feet northeast of Bluff A; tablet set in rock	48	04	09.60	123	47	34.09	284.0
Dead Tree, on beach, at small flat near a dead tree; tablet set in rock	48	04	21.28	123	47	26.95	1,278.6
Devil, at point locally known as Devil's Point; tablet set in rock	48	05	02.68	123	47	11.40	4,326.7
Harrigan, at point locally known as Harrigan's Point; tablet set in rock	48	05	16.06	123	47	18.22	1,432.0
Anderson, on wharf, near Anderson's farm; flag	48	05	34.96	123	47	58.55	3,341.9
Mitchell, on Mr. Mitchell's lawn; tablet set in rock	48	05	36.22	123	47	26.24	2,197.3

LAKE CRESCENT QUADRANGLE—Continued.

From west border east along highway to Crescent Lake. (By C. F. Urquhart in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 5 (Pysht quadrangle)	48 04 17.8	124 01 01.1	.....
Milepost 4	48 04 21.1	123 59 44.3	5,230
Milepost 3	48 04 22.2	123 58 26.9	5,254
Fairholm, 2.3 miles west of, in southwest angle of road fork south to Solduc; iron post stamped "Prim. Trav. Sta. No. 42. Elev. 1,150, 1917."	48 04 29.0	123 57 28.8	3,909
Section line crossing road	48 04 22.5	123 56 42.6	3,208
Fairholm, 650 feet south of ferry landing, on north side of road, in top of large rock; bronze tablet stamped "Prim. Trav. Sta. No. 47. Elev. 619, 1917."	48 04 06.6	123 54 59.9	7,160
Point on wharf	48 04 06.0	123 54 54.7	358
West base of Crescent Lake triangulation	48 04 07.27	123 54 55.05	127

From point near Fairholm south along road to Solduc Hot Springs. (Single spur line.)

Milepost 3, (previous line)	48 04 22.2	123 58 26.9	5,254
Milepost 3, on Solduc road	48 04 15.4	123 58 18.7	883
Signboard Solduc 10 miles and L. C. 4	48 04 05.0	123 59 33.4	5,180
Moore's place, at fork to; iron post stamped "Prim. Trav. Sta. No. 43, 1917 (?)	48 03 02.3	123 58 53.4	6,911
Section line	48 02 56.2	123 57 58.7	3,771
Milepost 7	48 02 40.3	123 57 25.2	2,791
North Fork of Soleduck River	48 02 30.2	123 56 54.7	2,305
Section line	48 02 23.0	123 56 39.5	1,267
Section line	48 01 47.9	123 56 03.3	4,324
Milepost 9	48 01 35.1	123 55 36.1	2,259
Solduc Hot Springs, 4.74 miles north of, 0.44 mile south of milepost 9, on west edge of road; iron post stamped "Prim. Trav. Sta. No. 44. Elev. 300, 1917."	48 01 18.4	123 55 14.7	2,226
Milepost 10	48 00 12.7	123 54 14.4	7,819

MOUNT OLYMPUS QUADRANGLE.

From north border of quadrangle south to Solduc. (Single spur line. By C. F. Urquhart in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Solduc Hot Springs, 2.75 miles north of, on east edge of road in top of large rock; bronze tablet stamped "Prim. Trav. Sta. No. 45. Elev. 1,646, 1917."	47 59 54.1	123 53 52.4	2,406
Milepost 12	47 59 37.2	123 53 22.0	2,687
Signboard "Solduc Hot Springs 2 miles."	47 59 28.1	123 53 15.6	1,018
Milepost 14	47 58 22.6	123 51 55.7	8,587
Solduc, at northwest corner of bridge over Soleduck River; iron post stamped "Prim. Trav. Sta. No. 46. Elev. 1,641, 1917"	47 58 14.2	123 51 40.5	1,336

PORT ANGELES QUADRANGLE.

From U. S. Coast and Geodetic Survey triangulation station Ediz Hook Lighthouse to U. S. Coast and Geodetic Survey triangulation station Dungeness Lighthouse along sand spits and highways. (By C. F. Uruqhart in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Ediz Hook Lighthouse, U. S. Coast and Geodetic Survey triangulation station	48 08 27.62	123 24 10.29	.....
Angeles, U. S. Coast and Geodetic Survey triangulation station on Ediz Hook, near the base of spit, 23 paces from the high water mark of Port Angeles, 14 paces back from high water mark of strait, 98 paces from signal in line to Ediz Hook Lighthouse, west gable of an old hut, only one on spit beyond Bradshaw Wharf and warehouse; center is marked by a ⅝-inch hole drilled 1.5 inches deep in a large stone, buried 18 inches beneath surface of ground	48 08 21.21	123 27 24.08	13,164
Station 17, on road	48 07 55.2	123 27 53.3	3,300
Ediz Lighthouse, 3.18 miles west of, 2 miles west of Port Angeles, at northwest corner of P. S. M. & T. Lumber Co.'s yard, 15 feet east of railroad, 20 feet south of highway crossing; iron post stamped "5, 1917, Prim. Trav. Sta. No. 2"	48 07 55.8	123 27 52.7	72
Port Angeles	48 07 25.7	123 26 57.3	4,839
Port Angeles, corner of First and Valley streets	48 07 18.9	123 26 19.2	2,675
Port Angeles, intersection of First and Race streets	48 06 48.6	123 25 05.0	5,900
Port Angeles, intersection of First and Race streets; iron post stamped "Prim. Trav. Sta. No. 27, 1081, 1917"	48 06 48.5	123 25 05.6	38
White Creek bridge; west end of	48 06 36.4	123 24 24.3	3,057
Ennis Creek bridge; west end of	48 06 24.9	123 23 43.0	3,033
Lee Creek bridge; west end of	48 06 18.5	123 22 56.5	3,220
Mount Pleasant road; east junction	48 06 19.9	123 22 10.3	3,137
Road north	48 06 39.5	123 21 32.1	3,265
Morse Creek bridge; center of	48 06 14.4	123 21 22.0	2,636
Port Angeles, 5.50 miles east of, on north side of road, at top of grade on east side of Morse Creek; iron post stamped "Prim. Trav. Sta. No. 12, 212, 1917"	48 06 30.3	123 20 51.0	2,652
Bagley Creek; crossing	48 05 56.9	123 19 43.0	5,723
Road south	48 05 48.6	123 18 23.4	5,466
Port Angeles, 8.41 miles east of, 0.54 mile east of Fairview School, on north side of road, at bend; iron post stamped "Prim. Trav. Sta. No. 13, 332, 1917"	48 05 48.2	123 17 26.7	3,850
Siebert Creek bridge; west end of	48 06 11.93	123 16 34.96	4,257

From Primary Traverse Station No. 12, summit of hill on east side of Morse Creek, along Port Angeles and Dungeness Road, along highway to Mr. Danz's ranch, thence by trail and highway to Primary Traverse Station No. 19.

Prim. Trav. Sta. No. 12 (Station 69)	48 06 30.3	123 20 51.0	.....
T on old highway	48 06 13.6	123 20 47.5	1,709
Sign "1 mile to Dungeness road"	48 05 20.4	123 20 57.3	5,433
New road running south	48 05 00.5	123 20 57.6	2,023
Port Angeles, 5.80 miles east by 1.85 miles south of, at point where road turns south; iron post stamped "Prim. Trav. Sta. No. 21, 492, 1917"	48 05 00.2	123 20 34.8	1,548
Sign "2 miles to Dungeness road"	48 04 47.6	123 20 20.8	1,598
Hub opposite Homestead gate	48 04 29.8	123 20 16.1	1,831
New road to the west	48 04 07.4	123 20 14.0	2,266
Sign "3 miles to Dungeness road"	48 04 02.9	123 20 14.6	473
North end of cut, in road, opposite house	48 03 25.8	123 20 12.7	3,757
Sign "4 miles to Dungeness road"	48 03 11.2	123 20 15.1	1,485
Port Angeles, 5.80 miles east and 4.95 miles south of, in front of Earl Cooledge's house, 10 feet west of road; iron post stamped "Prim. Trav. Sta. No. 22, 936, 1917"	48 02 38.3	123 20 20.7	3,349
Sign "Dungeness road 5 miles"	48 02 21.2	123 20 20.8	1,739
Bridge south of shingle mill	48 02 00.0	123 20 22.2	2,150
Bridge	48 01 49.0	123 20 17.3	1,165
Sign "6 miles to Dungeness road"	48 01 37.3	123 20 23.6	1,260
Morse Creek trail	48 01 12.4	123 20 30.7	2,565
Sign "7 miles to Dungeness road"	48 01 09.7	123 20 02.7	1,919
Road fork	48 01 06.9	123 19 45.2	1,227
Bridge	48 00 58.3	123 19 18.4	2,020
Port Angeles, 5.80 miles east and 8.65 miles south of, 55 feet northwest of Fred Danz's ranch house, near chicken-yard fence; iron post stamped "Prim. Trav. Sta. No. 23, 1789, 1917"	48 00 25.5	123 18 46.9	3,952
North side of cabin above creek	48 00 14.9	123 18 23.1	1,945
Canyon, east side of, "U. S. B. M." painted on tree	48 00 48.3	123 16 31.1	8,335
Section line	48 01 07.9	123 16 29.0	1,996
Sign "6 miles to Dungeness road"	48 01 25.2	123 16 28.5	1,752
Port Angeles, 9.50 miles east and 5.00 miles south of, on west side of road, at T road east to Sequim; iron post stamped "Prim. Trav. Sta. No. 19, 1128, 1917"	48 02 12.2	123 16 28.2	4,757

PORT ANGELES QUADRANGLE—Continued.

From east end of Third Street bridge, Port Angeles, along railroad to Joyce.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Port Angeles, station 20, approximately at east end of Third Street bridge	48 07 25.7	123 26 57.3	.....
Road crossing	48 07 56.8	123 28 48.8	8,194
Road crossing	48 07 44.0	123 29 59.5	4,970
Prim. Trav. Sta. No. 3, road crossing Lower Elwah road, previously described in Port Crescent quadrangle list	48 07 25.4	123 31 28.5	6,320
Tumwater schoolhouse (district No. 49), northwest corner of; iron post stamped "Prim. Trav. Sta. No. 10"	48 03 31.5	123 30 00.8	.....
Center of crossing on logging railroad	48 03 46.4	123 28 27.2	2,732
Road west	48 03 31.2	123 29 00.0	4,906
Summit of hill	48 05 14.2	123 28 07.2	5,639
Port Angeles, 3.25 miles southwest of, just south of Christ. Baker's house, on outer edge of road at sharp bend, opposite old stone quarry; iron post stamped "Prim. Trav. Sta. No. 11, 565, 1917"	48 05 31.3	123 27 59.7	1,806
Port Angeles, city limits	48 06 04.4	123 27 09.2	7,257
Port Angeles, intersection of Eighth and Pine streets	48 06 59.9	123 26 46.0	3,030
Port Angeles, intersection of Eighth and Lincoln streets	48 06 45.5	123 26 10.8	2,800
Port Angeles, intersection of Eighth and Francis streets	48 06 29.5	123 25 31.5	3,120
Port Angeles, intersection of First and Race streets	48 06 48.6	123 25 05.0	2,645

From intersection of First and Race streets, Port Angeles, south to Primary Traverse Station No. 28, at end of road near Fisher's ranch. (Spur line.)

Port Angeles, station 26, First and Race streets	48 06 48.6	123 25 05.0	.....
Port Angeles, 2 miles south of, at milepost	48 05 55.9	123 25 26.2	5,529
Creek	48 04 44.3	123 25 08.3	7,355
Port Angeles, 4 miles south of, at milepost	48 04 20.7	123 25 10.4	2,397
Port Angeles, 4.16 miles south of, 300 feet south of Jones's house, on east edge of road; iron post stamped "Prim. Trav. Sta. No. 27, 1081, 1917"	48 04 13.5	123 25 11.9	734
Road west	48 04 05.2	123 25 17.9	940
White Creek, bridge over	48 03 53.8	123 25 22.4	1,195
Creek	48 03 24.5	123 25 10.4	3,075
Creek	48 03 17.8	123 25 08.4	686
On bridge over small creek	48 03 03.3	123 25 07.8	1,477
Morse Creek trail and ranger station	48 02 44.6	123 25 02.5	1,930
Section line	48 02 38.4	123 25 05.6	660
Trail to ranger station	48 02 35.0	123 25 13.0	605
Bridge at Fisher's ranch	48 02 28.1	123 25 43.1	2,164
Trail east to clearing	48 02 22.3	123 25 49.5	727
Ennis Creek, ranger station, 1 mile south of, at junction of Mount Angeles and Little River trails; iron post stamped "Prim. Trav. Sta. No. 28, 1957, 1917"	48 02 25.9	123 26 03.7	1,028

North along highways.

Section corner, road turns west	48 02 11.4	123 15 09.7	.....
Port Angeles, 9.50 miles east and 5.00 miles south of, on west side of road, at T road east to Sequim; iron post stamped "Prim. Trav. Sta. No. 19, 1128, 1917"	48 02 12.2	123 16 28.2	5,334
Opposite Blue Mountain School (district No. 41)	48 03 02.7	123 16 27.4	5,116
Port Angeles, 9.50 miles east and 2.25 miles south of, on east side of road, 25 feet north of bridge; iron post stamped "Prim. Trav. Sta. No. 20, 477, 1917"	48 04 51.3	123 16 27.4	11,003
Sign "1 mile to Dungeness road"	48 05 30.7	123 16 26.4	3,996
Station 87, at gravel pit, 1,120 feet east of Siebert Creek bridge, on Port Angeles and Dungeness road	48 06 20.3	123 16 14.7	5,087

Magnetic declination for quadrangle, 24° 15′ E.

PORT CRESCENT QUADRANGLE.

West along Seattle, Port Angeles & Western R. R. and county road. (By C. F. Urquhart in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Port Angeles, 3.7 miles west of, at Lower Elwha River road crossing on railroad, 15 feet east of road and 25 feet south of track, 15 feet south of electric bell; iron post stamped "Prim. Trav. Sta. No. 3, Elev. 227, 1917"	48	07	25.4	123	31	28.5	.....
Elwha River, east end of trestle over	48	06	52.2	123	33	02.7	7,225
Elwha station, 2 feet southwest of station sign, at end of switch	48	07	53.5	123	33	58.4	7,270
Ranger railroad station, crossing at	48	07	47.6	123	35	16.6	5,333
Covill, 0.7 mile east and on second curve east of station, at farm crossing, 17.6 feet south of center of track; iron post stamped "Prim. Trav. Sta. No. 4, 22, 1917"	48	07	33.9	123	36	46.6	6,262
Covill, road crossing at station	48	07	30.1	123	37	41.8	3,767
Salt Creek	48	07	29.3	123	40	05.9	9,770
Ramapo, about 600 feet west of station, on bank at right of way line, 20 feet south of railroad, between two large cedar stumps, 170 feet from store; iron post stamped "Prim. Trav. Sta. No. 5, 247, 1917"	48	07	22.2	123	40	54.3	3,363
Road crossing	48	07	41.2	123	41	51.8	4,465
Joyce, 410 feet east of station, at northeast corner of railroad crossing; hub	48	08	11.0	123	43	52.7	8,737
Joyce, 0.53 mile west of, at road crossing	48	08	16.3	123	44	39.3	3,200
Joyce, 0.55 mile west of, 100 feet south of railroad, 10 feet east of road, southeast side of road fork to Twin; iron post stamped "Prim. Trav. Sta. No. 6"	48	08	15.7	123	44	40.6	107

Northeast along highways near west border to Tongue Point, Crescent Bay.

Creek	48	08	41.6	123	44	10.3	.....
Logging railroad; crossing on	48	09	17.5	123	43	54.1	3,891
Port Crescent, at foot of hill, fork of road	48	09	33.4	123	44	29.9	2,300
Tongue Point, at northeast corner of Crescent Bay, concrete International Boundary Monument 6 by 2 by 2 feet, marked on north face "Canada Treaty 1908" and on south face "U. S. Reference mark"	48	10	02.18	123	42	13.72	5,932

East along highways through south half of quadrangle.

Creek	48	05	26.9	123	44	56.8	.....
Station 368, not described	48	05	15.9	123	44	36.6	1,770
East Beach, 60 feet northwest of road fork, on north side of road along lake, on projecting rock; bronze tablet stamped "Prim. Trav. Sta. No. 8, 663, 1917"	48	05	14.6	123	44	33.4	255
Turn in road from southeast to northeast at old grade	48	05	16.4	123	43	51.9	2,826
Maple Grove camp, at fork of road to; bench mark	48	04	49.7	123	42	09.0	7,492
Eden Valley, on old road to, at fork leading up mountain	48	04	44.2	123	41	57.4	791
Elwha post office, 4.8 miles west of, 17 miles southwest of Port Angeles, exactly opposite county milepost 17, on south side of road, near east end of Lake Sutherland; iron post stamped "Prim. Trav. Sta. No. 9, 571, 1917"	48	04	38.4	123	41	19.9	2,612
Indian Creek; bridge over	48	04	32.9	123	40	03.8	5,197
Port Angeles, 15 miles southwest of, at signpost	48	04	22.0	123	38	57.1	4,664
Elwha, 1.6 miles west of, 0.5 mile west of Culverwell's ranch, on north side of East Beach road, 7 feet from center; iron post stamped "Prim. Trav. Sta. No. 26, 427, 1917"	48	04	05.6	123	37	32.5	5,983
Culverwell's farm, opposite road to	48	03	50.5	123	36	50.5	3,236
Schoolhouse, 470 feet west of fork of road and trail to Olympic Hot Springs, 23 feet, true azimuth 13° 51′, from southeast corner post; bench mark	48	03	41.0	123	35	40.6	4,848
Fork at trail to Olympic Hot Springs, 40 feet east of	48	03	40.0	123	35	33.3	510
Upper Elwha bridge, 155 foot bridge, west end of	48	03	20.7	123	34	56.0	3,201
Road up Little River	48	03	50.9	123	34	18.8	3,969
Port Angeles, 10.0 miles southwest of, in northeast angle at junction of roads, 75 feet north of Little River bridge; iron post stamped "Prim. Trav. Sta. No. 24, 222, 1917"	48	03	51.1	123	34	19.0	23
Bridge over Spring Branch	48	03	50.4	123	33	27.6	3,493
North and south section line	48	03	50.0	123	32	55.6	2,183
Port Angeles, 6.4 miles southwest of, at summit of road, 4.2 feet from northwest corner of Little River or Tumwater schoolhouse (district No. 49); iron post stamped "Prim. Trav. Sta. No. 10, 1022, 1917"	48	03	31.5	123	30	00.8	5,687

PORT CRESCENT QUADRANGLE—Continued.

From Primary Traverse Station No. 24, northeast to point near center of east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Olympic Forest, north boundary	48 04 19.0	123 34 16.5	2,833
Bridge, 110 feet long, southwest end of	48 04 25.3	123 34 11.8	714
Bridge, 75 feet long, southwest end of	48 04 34.6	123 33 58.3	1,315
Bridge, 75 feet long, southwest end of	48 04 56.4	123 33 31.6	2,863
Bridge, about 200 feet long, south end of	48 05 33.0	123 33 12.4	3,926
Olympic Power Plant, at fork to, on East Beach road, 114° azimuth 93.5 feet from northwest corner of house, 285° azimuth 50.2 feet from power-line pole; iron post stamped "Prim. Trav. Sta. No. 25"	48 06 05.0	123 32 08.6	5,412
Road fork, road to Piedmont	48 06 31.7	123 32 08.7	2,700
Road fork, at old Lake Crescent road	48 06 45.6	123 32 08.7	1,410
Lower Elwha road, T road fork	48 06 45.0	123 31 28.4	2,737
Prim. Trav. Sta. No. 3, (previously described)	48 07 25.4	123 31 28.5	4,102

Magnetic declination through center of quadrangle, 24.1° E.; for west border of quadrangle, 24.40° E.; through south half of quadrangle, of 24.3° E.; near the east border of quadrangle, 24.3° E.

From point near center of southeast quarter of quadrangle south along highway to south border of quadrangle. (Single spur line, Azimuths checked by needle only.)

Station 466 (previously described)	48 03 40.0	123 35 33.3	
North end of trail	48 02 47.9	123 36 05.8	5,722
East end of trail	48 02 26.6	123 36 05.4	2,164
Milepost 2 miles to road	48 02 20.3	123 36 00.2	726
Boulder 8 feet in diameter by 6 feet high, 10 feet west of trail	48 01 39.5	123 35 47.2	4,225
Hughes Creek, 15 feet wide	48 01 33.7	123 35 47.4	590
Elwha, 3 miles south of, 304 feet south of Hughes Creek, 6 feet east of center of trail; iron post stamped "Prim. Trav. Sta. No. 29, 364, 1917." (True elevation is 342.6 feet.)	48 01 30.9	123 35 48.0	293
Milepost 4 miles to road	48 00 53.3	123 36 02.6	3,834
Creek 2 feet wide	48 00 44.2	123 36 15.0	1,252
Trail running to Elwha ranger station cable crossing on river	48 00 40.4	123 36 14.9	384
Opposite milepost 5 miles to Port Angeles road	48 00 14.3	123 36 29.7	2,823
Creek 3 feet wide	48 00 04.0	123 36 38.0	1,192

Magnetic declination for south border of quadrangle, 23.0° E.

PYSHT QUADRANGLE.

Along Seattle, Port Angeles & Western R. R. and highways in northeast part of quadrangle. (By C. F. Urquhart in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Dode, U. S. Coast and Geodetic Survey triangulation station, on highest part of a gravel spit, 4 or 5 miles west of Twin Rivers, about 4 miles east of Pillar Point. Outlet of a small stream is on west side of spit. In line to Pillar Point, the station is 11 paces from edge of grass and 40 paces from high-water mark. In line to Twin Rivers, 30 paces from high-water mark. In line to point of spit, 26 paces to edge of grass, 52 paces to high-water mark. About 80 paces back of station is corner of rail fence. Center is marked by a ⅝-inch hole drilled 2 inches deep in a large stone, buried 16 inches beneath surface of ground. Station mark: 3 stubs, north, south, and east. Each marked by a copper tack, 6 feet from center of station. Station recovered in 1908. 18 inches west of station spit has been eroded by storm waters making a declivity of from 2 to 3 feet, although high-water mark is apparently little changed	48 10 31.21	124 01 25.54	
Point not described	48 10 47.6	124 03 07.4	7,107
Pysht, 3.4 miles east of, in bed at mouth of Joe Creek, in granite rock; bronze tablet stamped "Prim. Trav. Sta. No. 52, 5, 1917"	48 10 47.3	124 03 09.1	106
Pysht, at northwest corner of Weather Bureau yard; iron post stamped "Prim. Trav. Sta. No. 38, 10, 1917"	48 12 03.8	124 06 35.8	15,973

PYSHT QUADRANGLE—Continued.

Along Seattle, Port Angeles & Western R. R. and highways in northeast part of quadrangle—Con.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Pysht, 0.6 mile west of, 990 feet southwest of southwest end of bridge, at bend in road	48	11	49.5	124	07	13.7	2,949
South end of bridge	48	11	55.8	124	07	02.6	990
Pillar Point, about 60 feet west of, U. S. Coast and Geodetic Survey triangulation station, on a rock 20 feet above high-water mark and 25 feet square at top; brush cleared off top and hole dug 3 feet to solid rock. Hole was drilled 2 inches deep in this rock	48	13	02.16	124	06	06.2	7,727

Magnetic declination in northeast part of quadrangle, 24.7° E.

From Shiprock south and east along highways and along Seattle, Port Angeles & Western R. R to point near Pillar. (By C. F. Urquhart in 1917.)

Slip Point, land on east shore of Clallam Bay, weather permitting, otherwise on west shore; Clallam Creek must be forded if walking from west end of bay, and walking is bad at high tide. Concrete pier built at station; well sunk about halfway up from creek; distance from landing to station 1.5 miles; station is 450 feet above water; recovered in 1892 and 1908; signal erected for hydrographic use	48	15	41.45	124	14	22.06	.....
East Clallam, in front of hotel, 3 feet southeast of approach to bridge leading to wharf in Clallam; iron post stamped "Prim. Trav. Sta. No. 31, Elev. 15, 1917"	48	15	19.8	124	15	33.1	5,279
Creek	48	14	16.0	124	15	40.4	6,478
Clallam River, on bridge over	48	13	28.5	124	15	11.2	5,192
Railroad crossing	48	13	21.6	124	15	11.8	697
East Clallam, 3.6 miles south of, north of small bridge, east side of road, 30 feet south of 3 notches in spruce tree, 25 feet north of bench mark on hemlock tree; iron post stamped "Prim. Trav. Sta. No. 32, Elev. 234, 1917"	48	12	10.1	124	14	14.8	8,202
Bridge	48	11	31.5	124	13	26.9	5,079
Creek	48	11	07.0	124	12	59.6	3,090
East Clallam, 5.73 miles southeast of T road east to Pysht, 10 feet west of road; iron post stamped "Prim. Trav. Sta. No. 33, Elev. 171, 1917"	48	10	38.5	124	12	48.3	2,978
Bridge	48	10	45.9	124	12	16.8	2,271
Bridge	48	11	18.6	124	10	15.7	8,847
Pysht, 2.61 miles west of, 35 feet east of east end of Pysht River bridge, on south edge of road; iron post stamped "Prim. Trav. Sta. No. 34, Elev. 37, 1917"	48	11	24.2	124	09	20.8	3,770
Bridge	48	11	24.6	124	08	09.3	4,843
Railroad crossing	48	11	27.5	124	08	03.4	501
Bend in road, 990 feet southwest of south end of bridge over Pysht River at Merrill and Ring camp	48	11	49.5	124	07	13.7	4,046

From point south of East Clallam along highways south and east to Fairholm.

Previous line	48	10	38.5	124	12	48.3	.....
Bridge over Pysht River, center of	48	10	19.8	124	12	38.9	1,998
Bridge, 240 feet long, fourth board from concrete end of, 450 feet northeast of north end of another bridge	48	09	32.6	124	12	55.3	4,920
South end of bridge	48	08	55.0	124	13	04.0	3,849
North end of south twin bridge	48	08	44.2	124	08	44.2	1,102
Sapho, 6.37 miles north of, 1,000 feet south of twin bridges, 20 feet west of road; iron post stamped "Prim. Trav. Sta. No. 35, Elev. 761, 1917"	48	08	36.3	124	13	13.1	960
On bridge	48	08	29.0	124	12	56.2	1,367
Bridge	48	07	46.2	124	13	01.4	4,363
Sign "Sapho 4 miles"	48	07	07.9	124	13	53.7	5,258
Sapho, 2.79 miles north of, on west edge of road, 75 feet north of bridge; iron post stamped "Prim. Trav. Sta. No. 36, 574, 1917"	48	06	41.6	124	15	13.0	6,002
Opposite falls on Beaver Creek	48	05	41.4	124	15	57.6	6,809
Beaver Creek, bridge over	48	05	34.6	124	15	52.7	772
Sapho, 0.74 mile south of, in north west angle at junction of roads; iron post stamped "Prim. Trav. Sta. No. 37, Elev. 458, 1917".	48	04	14.3	124	16	48.4	8,970
Milepost 16 miles to Crescent Lake	48	04	03.6	124	14	36.0	9,061
Bridge 43 feet long over Bear Creek, west end of	48	03	59.7	124	14	03.7	2,230
Fairholm, 15.0 miles west of, 0.6 mile east of Bear Creek, 275 feet east of 15-mile post, near hemlock tree on north side of road, tree blazed and marked "U. S. B. M."; iron post stamped "Prim. Trav. Sta. No. 38, 618, 1917"	48	03	54.4	124	13	16.3	3,260
Milepost 14	48	03	49.9	124	12	05.6	4,825
Milepost 13	48	03	44.8	124	10	46.2	5,420

PYSHT QUADRANGLE—Continued.

From point south of East Clallam along highways south and east to Fairholm—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Fairholm, 12.1 miles west of, 60 feet west of milepost 12, on south side of road; iron post stamped "Prim. Trav. Sta. No. 39, 734, 1917"	48	03	42.7	124	09	31.6	5,075
Bridge, center of	48	03	41.3	124	08	38.4	3,620
Bridge	48	03	41.6	124	07	45.6	3,583
Milepost 10	48	03	54.3	124	07	02.4	3,203
Fairholm, 9.13 miles west of, 15 feet south of southwest corner of small bridge; iron post stamped "Prim. Trav. Sta. No. 40, 1917, 767"	48	04	10.6	124	06	13.8	3,693
On bridge	48	04	11.6	124	05	48.7	1,709
Milepost 8	48	04	07.8	124	04	50.5	3,969
Milepost 7	48	04	11.4	124	03	30.8	5,425
Fairholm, 6.23 miles west of, 1,930 feet west of bridge, 15 feet north of road, 845 feet west of milepost 6; iron post stamped "Prim. Trav. Sta. No. 41, Elev. 935, 1917"	48	04	14.2	124	02	31.3	4,053
Milepost 5	48	04	17.8	124	01	01.1	6,140

Samish Lake, Sumas, Van Zandt, and Wickersham quadrangles.

SKAGIT AND WHATCOM COUNTIES.

The following geographic positions on approximate North American datum were determined in 1917 by F. J. McMaugh and L. F. Biggs.

They are based on Town triangulation station, boundary post 31, and on a primary traverse point at Sedro Wooley.

SAMISH LAKE QUADRANGLE.

From point near Burlington north and northwest along Great Northern Ry. to Bellingham. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing, 35 feet north of bridge 39.3, signboard east of track reads "Seattle 82, Vancouver 83, Bellingham 23 miles"	48	30	06.6	122	20	02.7	.....
Road crossing	48	30	29.0	122	20	07.4	2,296
Belleville, at switch just south of station, semaphore 744–745	48	30	37.7	122	20	03.2	883
Belleville, 85 feet north of railroad crossing, north of station, 20 feet west of public road, 80 feet south of center of road opposite J. S. Elmore's house; iron post stamped "Prim. Trav. Sta. No. 1, 1917. Elev. 29"	48	30	45.9	122	20	13.5	881
Public-road crossing, old railroad grade	48	30	56.2	122	20	13.0	1,039
Farm-road crossing, about 1,000 feet northwest of large red barn, first crossing north of trestle over ditch	48	31	39.9	122	20	22.1	4,471
Road crossing, about 200 feet west of intersection with main road	48	32	00.5	122	20	20.6	2,089
Samish River, 738 feet southwest of north end of trestle over, at fence corner, 50 feet northeast of A. L. Wiles's house, 30 feet southeast of door of small house, 45 feet west of old railroad grade; iron post stamped "Prim. Trav. Sta. No. 2, 1917"	48	32	42.5	122	20	15.9	4,261
Samish River, north end of trestle over	48	32	49.4	122	20	12.4	738
Main-road crossing, 300 feet northeast of public school	48	33	18.9	122	19	59.2	3,125
Belfast, 1.8 miles north of, about 0.2 mile north of fish hatchery, 28 feet east of center of railroad grade, west of west bank of Friday Creek; iron post stamped "Prim. Trav. Sta. No. 3, 1917, 123 B" (old b. m. see Bull. 557, p. 104)	48	34	01.1	122	20	00.8	4,268
North end of 60-foot trestle over creek	48	34	15.6	122	20	14.2	1,726
South end of 200-foot trestle	48	34	18.8	122	20	15.7	341
Road fork west uphill	48	34	31.7	122	20	12.9	1,316
Trestle, 3 feet north of north end, 45 feet west of north end of highway bridge; stake	48	35	03.4	122	20	04.7	3,267
Trestle over large creek, south end	48	35	48.6	122	19	40.4	4,865
Post with sign marked "1 mile S"	48	36	12.7	122	19	58.8	2,736

SAMISH LAKE QUADRANGLE—Continued.

From point near Burlington north and northwest along Great Northern Ry. to Bellingham—Con.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Alger, 110 feet north of railroad crossing, 10 feet west of road, 12 feet east of fence; iron post stamped, "Prim. Trav. Sta. No. 4, 1917"	48	37	08.6	122	20	18.0	5,812
Alger, railroad crossing, public road north of	48	37	27.7	122	20	35.6	2,494
Milepost 10, east rail opposite	48	38	38.7	122	21	14.2	7,435
Road crossing, 180 feet east of main road, at signpost marked "Bell. 11 mi. Park 6 mi.", 260 feet east of switch; center of track	48	39	01.9	122	21	35.4	2,746
Manley's Mill, 1,450 feet east of, on southeast shore of Samish Lake, 1.1 miles southeast of A. C. Milne house, 440 feet south of dark brown bungalow, north side of road, 14 feet south of west corner of wooden bridge on Pacific Highway; iron post stamped "Prim. Trav. Sta. No. 5, 1917. Elev. 343 B"	48	39	19.7	122	22	01.2	2,501
Bridge	48	39	38.7	122	22	12.5	2,071
South end of bridge	48	39	59.2	122	22	18.9	2,117
South end of bridge	48	40	23.0	122	23	09.8	2,175
East end of bridge	48	40	28.0	122	23	23.5	1,056
Signpost marked "Seattle 97 mi., Vancouver 69 mi., Mt. Vernon 231 mi., Bellingham 9 mi."	48	40	31.2	122	23	41.2	1,280
Concrete bridge	48	40	50.8	122	23	41.0	1,830
Concrete culvert	48	41	07.1	122	23	34.0	1,712
A. C. Milne's house, 2.3 miles northwest of, 625 feet east of road to American Lumber and Shingle Co.'s mill, 1,610 feet east of bridge over Chuckanut Creek, south of road; iron post stamped "554 B. Prim. Trav, Sta. No. 6, 1917" NOTE.—This is an old bench-mark post relocated. Post is near its old position and 40 feet south of a cedar tree on north side of road, on root of which the old elevation of post 554.789 is transferred. No new description nor elevation was supplied by traverseman.	48	41	21.8	122	24	06.20	2,622
Road fork	48	41	24.0	122	24	14.4	596
East end of bridge	48	41	25.6	122	24	28.6	963
Road forks	48	41	24.4	122	25	40.5	4,830
Concrete culvert, center of road at	48	41	32.9	122	26	39.0	4,037
Road forks near bulletin boards on post	48	41	38.7	122	27	21.3	2,873
City-limit post	48	41	45.3	122	47	45.3	1,743
East end of bridge	48	41	49.7	122	27	48.0	485
T road north, 180 feet southwest of wooden garage, on north side of old railroad track	48	42	08.4	122	28	23.2	3,022
Center of road, under interurban electric railroad trestle	48	42	09.8	122	29	07.3	2,960
Road forks south and southeast, about 200 feet northwest of sign "4 miles from Hotel Leopold"	48	42	14.6	122	29	21.6	1,071
Fairhaven Park, just north of, at intersection of interurban electric railroad track and wooden viaduct	48	42	57.3	122	29	56.8	4,936
Bellingham, Fourteenth and Knox streets, in roadway, 1 foot west of planking, 1.5 feet north of end of concrete roadway; nail	48	43	22.6	122	29	56.8	2,560
Bellingham, Fourteenth Street and Ferry Avenue	48	43	48.3	122	29	56.8	2,600
Bellingham, east side of High Street, opposite center line of Cedar Street, near Normal School, 1 foot east of west edge of cement sidewalk; cross mark	48	44	19.6	122	29	06.6	4,627
Town triangulation station, on highest point of Sehome Hill on land belonging to City of Bellingham. Can be reached by taking trail to waterworks a short distance, thence trail to left, over first point into hollow, and up to station. Station mark: A bronze triangulation tablet cemented in stone and placed in ground level with surface	48	44	12.3	122	28	49.7	1,358

From Park southwest along railroad and highway to Lookout.

Railroad crossing, 160 feet northeast of north end of trestle	48	40	08.9	122	16	29.3	
Sharp bend in road, in line with south rail of track	48	39	59.6	122	16	55.5	1,993
Danger sign; west rail at	48	39	21.2	122	17	34.4	4,687
T road east	48	39	11.2	122	17	47.2	1,323
Road, opposite sign "Go Slow"	48	38	44.7	122	18	34.1	4,144
Crossroads at signpost marked "Park 4 mi., Bellingham 14 mi., South Bay 2 mi., Alger 3 mi."	48	38	49.2	122	19	23.4	3,340
Water tank	48	38	10.1	122	18	32.7	5,223
Switch at north end of siding	48	37	26.6	122	19	11.2	5,108
Trestle, north end, north of coal bunker	48	37	10.1	122	19	31.3	2,147
Prim. Trav. Sta. No. 4, 1917 (see previous list)	48	37	08.6	122	20	18.0	3,147

SAMISH LAKE QUADRANGLE—Continued.

From Belfast east and northeast along highways to Prairie.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Bridge over creek	48	33	32.4	122	19	41.0	5,581
T road east, signboard 30 feet northeast reads "Bellingham 18 mi., Prairie 6 mi." and another reads "Vancouver 78 mi., Bellingham 18 mi., Seattle 88 mi., Belfast 0.5 mi."	48	33	38.9	122	19	35.4	755
Road fork	48	33	18.8	122	17	33.7	8,441
Samish River, south end of bridge over	48	33	26.8	122	17	24.4	1,025
Samish River (probably), east end of bridge over	48	34	10.4	122	17	52.4	4,795
Moody's Old Camp (probably), no description supplied by traverseman; probably iron post stamped "Prim. Trav. Sta. No. 14"	48	34	52.3	122	17	25.6	4,623
West end of bridge	48	35	02.0	122	16	29.1	3,918
Road intersection	48	34	58.3	122	15	19.6	4,693
Southeast along Northern Pacific Ry. in northeast part of quadrangle.							
Railroad crossing, 60 feet southeast to landing	48	44	57.8	122	20	35.2	.....
Trestle, in west end of south rail	48	44	44.8	122	20	02.5	2,550
Towanda station, front of	48	43	57.5	122	18	53.4	6,666
Trestle No. 8, north end of	46	43	49.1	122	18	49.7	890
Water tank	48	43	08.6	122	17	56.2	5,448
Small stream near post 7A	48	42	25.6	122	17	50.5	4,370
Post No. 6	48	41	55.0	122	17	47.9	3,110
Blue Canyon, 800 feet east of coal bunker, 30 feet south of track, 1,200 feet east of milepost 5, in sandstone rock; aluminum tablet stamped "Prim. Trav. Sta. No. 10, 1917, 318B"	48	41	05.5	122	16	48.6	6,398
Trestle, west end of	48	40	49.3	122	16	22.8	2,382
Junction point 422=520	48	40	38.6	122	16	09.5	1,399
Park station, switch stand at, 80 feet southeast of I. O. O. F Hall (junction road to Alger)	48	40	34.2	122	16	01.7	686
Park station, road crossing	48	40	31.9	122	15	57.9	347
South along Northern Pacific Ry. near southeast corner of quadrangle.							
Switch stand, at north end of siding	48	33	37.4	122	15	21.3	.....
Hoogdal station, opposite north end of west rail	48	33	31.8	122	15	31.8	906
Trestle, north end of	48	32	40.0	122	15	55.1	5,475
Delvan railroad station	48	31	43.4	122	16	00.7	5,743
Switchstand	48	31	23.8	122	15	07.9	4,079

Magnetic declination for southwest part of quadrangle, 24.0° E.; for east and northeast parts of quadrangle, 24.8° E.

SUMAS QUADRANGLE.

East along Northern Pacific Ry. in south part of quadrangle. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Bellingham, Northern Pacific Ry. crossing	48	45	05.2	122	28	25.0	.....
Bellingham steam and electric street railroad crossing, office window opposite	48	45	29.7	122	28	06.6	2,780
Street crossing (asphalt road)	48	45	57.9	122	27	24.8	4,001
Railroad trestle, south rail under	48	46	20.8	122	26	21.5	4,834
Trestle over road	48	45	49.0	122	25	54.9	3,781
Steam and electric railroad crossing	48	45	48.8	122	25	12.0	2,865
Silver Beach station, 2 feet east of northeast corner of, 30 feet north of track; iron post stamped "Prim. Trav. Sta. No. 8, 1917, Elev. 313"	48	45	59.4	122	24	36.7	2,608
Southeast end of trestle	48	45	56.2	122	24	11.7	1,700
Road crossing, 150 feet south of whistling post, at inclined wooden road to lake	48	45	06.8	122	23	00.0	6,939
Trestle, track at west end of	48	45	06.0	122	22	20.7	2,637
Agate Bay, 72 feet east of track, 40 feet north of gate in fence, 50 feet southeast of grass triangle at road forks; iron post stamped "Prim. Trav. Sta. No. 9, 1917"	48	45	27.1	122	21	16.0	4,835
Bridge 11, south end of	48	45	06.1	122	21	09.9	2,168

SUMAS QUADRANGLE—Continued.

Along Bellingham & Northern R. R. near northeast corner of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Lamberton, 50 feet northeast of road crossing, 1 foot west of fence: iron post stamped "Prim. Trav. Sta. No. 21"	48	58	38.7	122	15	14.3	
Intersection of Northern Pacific and B. & N. railroads	48	59	24.9	122	15	55.4	5,422
Sumas River, south end of trestle over	48	59	44.2	122	15	54.6	1,958
Sumas boundary monument M 31	49	00	10.41	122	16	07.58	2,798

VAN ZANDT QUADRANGLE.

North along highways near center of quadrangle. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Clipper, railroad crossing at	48	45	38.3	122	11	44.1	
Railroad crossing, 400 feet north of switch	48	46	16.6	122	11	31.9	3,965
Milepost 108	48	46	52.9	122	11	20.8	3,759
Van Zandt, at southeast corner of schoolhouse yard; iron post stamped "Prim. Trav. Sta. No. 17, 1917. Elev. 239B"	48	47	22.3	122	11	29.1	3,022
Milepost 109	48	47	44.0	122	11	34.8	2,236
Wood-road crossing	48	48	11.7	122	11	45.7	2,900
Milepost 110	48	48	32.3	122	11	57.5	2,232
Milepost 111	48	49	18.4	122	12	36.7	5,354
Deming railroad station; south rail opposite	48	49	26.5	122	13	01.6	1,863
Deming, 200 feet west of livery stable, 500 feet northwest of railroad station, 20 feet north of highway, 70 feet southwest of entrance to school; iron post stamped "Prim. Trav. Sta. No. 18, 1917. Elev. 202B"	48	49	29.2	122	13	07.0	2,451
Railroad crossing near Deming	48	49	17.1	122	12	32.0	2,644
Bridge, 5 feet north of west end of	48	49	22.3	122	11	36.5	3,754
Junction with T road east, 10 feet north of	48	49	41.4	122	10	35.5	4,519
T road east to Welcome	48	50	18.3	122	09	57.7	4,516
Bell Creek School, center of road	48	50	39.8	122	09	47.0	2,298
South end of bridge	48	50	55.9	122	09	33.5	1,863
Bell Creek School, 1.36 miles north of, 10 feet east of road, 10 feet south of corner fences; iron post stamped "Prim. Trav. Sta. No. 19, 1917. Elev. 232B"	48	51	42.4	122	09	08.6	5,008
Small bridge	48	52	28.7	122	09	21.0	4,766
Plank bridge over dry creek	48	52	53.4	122	09	22.5	2,505
Plank bridge, north end of, 50 feet north of road forks	48	53	22.3	122	09	06.4	3,114
T road east to Kendall Fish Hatchery	48	53	53.7	122	08	40.1	3,641
Center of bridge, just east of gateway	48	54	19.9	122	08	32.1	2,706
Schoolhouse (district 35), center of road opposite	49	54	38.1	122	08	12.5	2,267
T road south, at signpost "Deming 9 M. Sumas 10.5 M. Maple Falls 3 M."	48	55	03.5	122	08	11.9	2,573
Kendall, 300 feet east of railroad station, 155 feet north of track, 60 feet northwest of post office; iron post stamped "Prim. Trav. Sta. No. 20, 1917." Elev. 446B	48	55	16.6	122	07	51.4	1,910
Trestle, south end of	48	56	00.1	122	08	37.6	5,375
Private-road crossing	48	56	19.3	122	08	47.9	2,064
Limestone Junction station; west rail opposite	48	57	29.3	122	09	25.5	7,533
Road crossing, private	48	57	54.2	122	09	38.9	2,678
Trestle 68	48	58	18.1	122	10	08.9	3,138
Switch stand, south end of	48	58	14.9	122	10	37.0	1,903
Road crossing, 150 feet northeast of lumber shed	48	58	00.5	122	11	10.3	2,657
Trestle B. & N. 66	48	58	13.2	122	11	48.6	2,860
Trestle 56; east end of, 60 feet west of milepost 28	48	58	03.9	122	12	41.3	3,639
Trestle 50, west end of	48	57	41.2	122	13	14.9	3,212
High trestle 40, west end of	48	58	01.4	122	13	53.8	3,303

VAN ZANDT QUADRANGLE—Continued.

Southeast along highways through center of south half of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T road east	48	50	18.3	122	09	54.7	
Bridge, south end of	48	50	17.5	122	09	12.9	2,997
T road north, 73 feet east of, 46 feet north of northwest corner of store, on south side of road, 37 feet west of nail in cedar stump; iron post stamped "Prim. Trav. Sta. No. 22, 1917"	48	50	22.7	122	08	52.2	1,480
Canyon Creek, west end of trestle over	48	50	46.5	122	08	06.1	4,790
Railroad crossing	48	49	31.0	122	07	51.2	1,863
Trestle over creek, south end of	48	48	53.9	122	07	38.6	3,848
Water tank	48	47	50.8	122	07	12.3	6,626
Road crossing, 20 feet west of, south rail	48	47	39.2	122	06	54.2	1,682
Road fork, 5 feet west of, on east side of road, opposite mail boxes; stake	48	47	10.2	122	06	38.5	3,134

North along highways near center of quadrangle.

Bridge, south end of	48	47	06.8	122	06	39.3	343
Tall tree with flag on top, 73 feet N. 440° E. of	48	46	52.3	122	06	45.4	1,526
Road, center of, opposite gate	48	46	10.9	122	06	45.2	4,195
Railroad crossing	48	46	01.3	122	06	51.9	1,070
T road north to Mosquito Lake	48	45	30.7	122	07	18.4	3,576
T road, 5 feet east of	48	45	16.0	122	07	30.4	1,694

Spur line.

Blazed tree, 2 feet north and 2 feet east of, "U. S. 12"	48	46	51.5	122	06	00.7	3,163
Prim. Trav. Sta. No. 23, 1917	48	46	44.3	122	05	22.6	2,657
Tree, 3 feet north, Elev. 996.85, N. 62° E. of bench mark on stump	48	46	42.8	122	05	04.1	1,248
Stake, on east side of ravine, 7 feet north of blazed tree, marked "U. S. P. T. S. 1065"	48	46	39.6	122	04	43.6	1,398

Magnetic declination for center of quadrangle, 24.5° E.

WICKERSHAM QUADRANGLE.

South along Northern Pacific Ry. in west part of quadrangle. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Wickersham, 2.0 miles northwest of, 185 feet west of shingle-mill switch stand, 2,400 feet east of milepost 3; iron post stamped "Prim. Trav. Sta. No. 11, 1917, Wash. Elev. 356B".	48	40	07.9	122	14	30.8	
Milepost 2, 10 feet south of	48	40	00.9	122	13	45.3	3,136
Switch stand, 12 feet south of	48	39	42.8	122	13	04.8	3,282
Overhead bridge, center of track under	48	39	37.8	122	12	43.1	1,543
Railroad crossing	48	39	22.4	122	12	42.0	1,563
Wickersham Ave., 33 feet north of railroad crossing at 2.5 feet north of telephone post, 17 feet east of track; iron post stamped "312 B"	48	39	12.5	122	12	42.4	1,005
County line between Whatcom and Skagit counties	48	38	46.0	122	12	33.7	2,754
Farm-road crossing	48	37	29.5	122	12	46.6	7,795
Trestle over small stream	48	37	00.2	122	13	09.2	3,338
Jenkins Creek, trestle over	48	36	34.4	122	13	23.0	2,766
Prairie station, 75 feet south of; point on east rail	48	36	04.7	122	34	37.3	3,159
Prairie station, 0.75 mile northeast of; 100 feet northwest of small brook crossing old right of way, 40 feet west of right of way, 10 feet southeast of northeast corner of mill office; iron post stamped "Prim. Trav. Sta. No. 13, 1917"	48	36	36.2	122	13	06.2	3,816
Trestle at Thornwood station	48	35	14.6	122	13	43.8	5,096
Switch stand, south end of	48	34	43.2	122	13	45.7	3,177
Switch stand, south end of	48	34	13.2	122	14	13.9	3,588
Trestle, north end of most northerly of two	48	30	58.9	122	14	12.8	
Sedro Wooley, intersection of Great Northern and Northern Pacific railroads at	48	30	23.9	122	14	21.4	3,590

WICKERSHAM QUADRANGLE—Continued.

From Wickersham north along Northern Pacific Ry. to north border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
County line	48	38	46.0	122	12	33.7	
Wickersham railroad station	48	39	00.8	122	12	34.0	1,510
Trestle, south end of	48	40	03.5	122	12	14.3	6,485
Doran, railroad crossing at	48	40	44.0	122	11	46.1	4,520
Saxon station, south of	48	41	10.1	122	11	28.0	2,908
Saxon station, 1,720 feet north of, 48 feet southeast of road crossing, 18 feet west of north and south fence line, 0.5 foot south of east and west fence; iron post stamped "Prim. Trav. Sta. No. 15, 1917." Elevation 319 B	48	41	35.7	122	11	23.2	2,623
Farm-road crossing	48	42	13.4	122	11	45.6	4,104
Railroad crossing, 874 feet south of Acme station	48	42	54.0	122	12	09.3	4,409
Station 742=1299	48	42	54.1	122	12	09.3	10
Bridge over Nooksack River, south end of approach to	48	43	46.8	122	12	19.5	5,291
Milepost 105, 0.25 mile north of, 50 feet west of track at railroad crossing, 35 feet north of corner of rail fence, 6 feet south of telephone pole; iron post stamped "Prim. Trav. Sta. No. 16, 1917." Elev. 268 B	48	44	32.1	122	12	05.7	4,776
Standard postoffice, road crossing at	48	44	47.2	122	12	00.2	1,574
Along highways.							
West end of bridge	48	44	39.9	122	07	23.7	
Welcome School; iron post stamped "Prim. Trav. Sta. No. 24, 1917." Azimuth from station 1198 to front door of Welcome School is N. 27° E., distance 219 feet	48	44	35.5	122	07	15.4	713
Blazed fir tree, marked "U. S. G. S. station 1225"	48	43	39.8	122	08	02.3	6,466
Bridge	48	43	36.1	122	08	14.8	921
Road fork at shingle mill, small building stands 80 feet northwest	48	43	40.6	122	08	36.6	1,532
Road fork north and northeast, at end of old railroad	48	43	40.4	122	08	50.4	918
East end of bridge	48	43	35.7	122	09	06.7	1,197
On small bridge	48	43	33.5	122	09	23.6	1,152
Nail on root of old stump, marked "Sta. 1261 U. S. G. S."	48	43	35.3	122	09	49.3	1,737
Intersection of old right of way, just east of water tank	48	43	28.8	122	10	22.5	2,323
Intersection of right of way and highway	48	43	13.5	122	10	39.4	1,921
Railroad crossing near trestle	48	43	06.3	122	10	51.8	1,101
West end of bridge, 300 feet west of white house	48	43	06.4	122	11	13.0	1,423
Fork in roads	48	43	07.4	122	11	41.2	1,890
Nooksack River, south end of bridge over	48	43	11.9	122	12	09.3	1,940
Station 1298=742, junction	48	42	54.1	122	12	09.3	1,800
Near Prairie.							
Road forks, sign post 35 feet northeast reads "Sedro Wooley 7 mi."	48	35	14.7	122	14	21.9	
Prairie, 75 feet south of station, point on east rail (previously listed)	48	36	04.7	122	13	37.3	5,896

Magnetic declination for quadrangle, 24.6° E.

WICKERSHAM QUADRANGLE—Continued.

Easterly up Nooksack River. (Checked spur line. By L. F. Biggs in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Road crossing, 1,000 feet south of Saxon station	48	41	10.1	122	11	28.0	.....
Nooksack River, 50 feet north of north end of bridge over, 6 feet south of fence line, north side of road; iron post stamped "Prim. Trav. Sta. No. 1, 1917." Reference point, copper nail in top of stump 37.2 feet distant	48	40	45.0	122	09	46.5	7,265
Center of road, opposite temporary bench mark	48	40	14.6	122	08	53.8	4,693
Skookum Creek, center of bridge over	48	40	18.6	122	08	26.4	1,884
Center of small bridge over creek	48	39	39.1	122	07	24.2	5,782
Road fork to old sawmill	48	39	15.2	122	07	11.4	2,572
Center of bridge over creek	48	39	00.1	122	07	12.1	1,531
Nooksack River, 100 feet east of, near northwest corner of fence at house; iron post	48	38	35.9	122	07	01.6	2,553
Fork of trail to west	48	38	05.5	122	07	10.1	3,129
Trail fork to west, 100 feet south of bridge, 130 feet north of school	48	37	41.1	122	06	45.1	2,990
Plumbago Creek, center of bridge over	48	37	22.6	122	06	43.5	1,880
Large cherry tree at abandoned houses, 80 feet west of river bank	48	37	08.7	122	06	18.4	2,191
Large log across the river	48	36	41.3	122	05	19.5	4,837
Large rock in center of river	48	36	25.2	122	04	29.3	3,744
Tree with triangle, on south bank of river, at old trail to cabin	48	36	02.3	122	03	12.7	5,648
Cross on boulder, on north bank of river, 40 feet north of water, 1,500 feet east of perpendicular bluff; chiseled cross under rock cairn, marked "U. S. G. S."	48	35	51.4	122	02	45.7	2,119

Magnetic declination for quadrangle, 24.6° E.

Cedar Lake, Mount Vernon, Snohomish, and Sultan quadrangles.

KING AND SNOHOMISH COUNTIES.

The following geographic positions, on North American datum, were determined by C. F. Urquhart in 1919.

They are based on points previously located in this area.

CEDAR LAKE QUADRANGLE.

From North Bend southeast to Garcia. (By C. F. Urquhart in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
North Bend, at crossing of North Bend Branch of Northern Pacific, at railroad station; iron post stamped "Prim. Trav. Sta. No. 12, 1919. Elev. 443 feet"	47	29	44.29	121	47	12.42	.....
Crossing of Sunset Highway and Northern Pacific Ry	47	28	54.48	121	45	27.67	8,789
Crossing of Sunset Highway and Northern Pacific Ry	47	28	34.47	121	44	44.91	3,570
Crossroads at sign "Edwich, 1 mile"	47	27	58.60	121	42	55.35	8,359
Junction of Y road	47	27	51.45	121	42	33.64	1,660
Road, opposite signpost marked "Easton 39 miles, North Bend 5 miles"	47	27	13.03	121	42	06.26	4,323
Snoqualmie River, center of steel bridge over	47	26	42.28	121	41	28.41	4,059
Road, opposite sign "Anabie Falls"	47	26	41.16	121	40	35.16	3,664
Road to Pines goat farm	47	26	27.32	121	40	02.23	2,663
Center of bridge over Hall Creek	47	26	11.32	121	39	24.07	3,085
T road north	47	25	49.84	121	38	15.35	5,202
Trail to Garcia railroad station	47	25	40.92	121	37	30.60	3,208
Garcia, opposite telegraph station window, on main line of Chicago, Milwaukee & St. Paul Ry. (see Bull. 496)	47	25	27.7	121	37	01.4	2,413

Magnetic declination for quadrangle, 23° 36′ E.

MOUNT VERNON QUADRANGLE.

From Hartford along highways in southeast corner of quadrangle. (By C. F. Urquhart in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Hartford, 10 feet north of station; iron post stamped "Prim. Trav. Sta. No. 5, 1909"	48	01	25.00	122	03	12.30	.....
T road	48	00	57.41	122	03	12.87	2,796
Crossroads to Granite Falls and Snohomish	48	00	57.19	122	03	02.30	720
Crossroads east to railroad	48	00	30.75	122	02	34.27	3,289

From Hartford to Monroe via Lake Roesiger.

Hartford, 10 feet north of station; iron post stamped "Prim. Trav. Sta. No. 5, 1909"	48	01	25.00	122	03	12.30	.....
T road east and west	48	00	57.41	122	03	12.95	2,796
Crossing on Northern Pacific Ry	48	00	57.17	122	03	03.16	668
Center of bridge	48	00	46.33	122	02	48.44	1,487
Road, opposite Lutheran Church	48	00	40.06	122	02	40.75	823

Magnetic declination for quadrangle, 23° 36′ E.

SNOHOMISH QUADRANGLE.

In northeast part of quadrangle. (By C. F. Urquhart in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of bridge	47	59	38.45	122	02	21.73	.....
Railroad crossing	47	59	15.75	122	02	13.02	2,375
T road east to Lake Roesiger	47	59	13.91	122	02	12.02	199
T road north to Machias	47	58	52.64	122	02	39.18	2,838
Crossing under Northern Pacific Ry	47	58	43.48	122	03	17.31	2,754
T road east to gravel pit, on Northern Pacific Ry. from Prim. Trav. Sta. No. 20 to Snohomish	47	58	31.76	122	03	37.48	1,814
Snohomish, 4 miles north of, on west side of road, on line of fence and in line with T road east across Northern Pacific Ry. track, 12 feet north of telephone pole; iron post stamped "Prim. Trav. Sta. No. 20, 1919"	47	57	50.54	122	04	02.54	4,511
Private-road crossing	47	57	17.49	122	04	12.72	3,420
Private-road crossing	47	56	26.25	122	04	28.37	5,301
Public-road crossing	47	55	29.00	122	04	51.86	6,018
Center of road, 100 feet north of Northern Pacific Ry. track	47	54	58.56	122	05	12.65	3,393
Snohomish, northwest corner of First and Cedar streets, 1 foot from curb line, 8 feet north of telephone pole; iron post stamped "Prim. Trav. Sta. No. 21, 1919"	47	54	41.52	122	05	29.45	2,071
Overhead crossing on Great Northern Ry	47	54	14.22	122	05	11.12	3,035
Pilchuck Creek, center of steel bridge over	47	54	08.39	122	05	10.31	594
Center line of road, opposite district No. 12 schoolhouse	47	53	17.00	122	04	20.14	6,230
Snohomish, 2.7 miles east of, at southeast corner of concrete wall around Pleasant Hill farm, opposite T road south uphill; iron post stamped "Prim. Trav. Sta. No. 22, 1919"	47	53	04.41	122	03	34.93	3,335
Logging road	47	52	13.98	122	02	18.33	7,306
T road south	47	50	57.20	122	00	49.52	9,860
T road north	47	50	59.02	122	00	01.69	3,269

Near northeast corner of quadrangle.

Center of bridge	47	59	43.22	122	02	20.71	.....
T road, Snohomish and Lake Roesiger	47	59	13.94	122	02	12.19	3,023
Pilchuck Creek bridge, north end of	47	59	15.61	122	02	03.80	596
Southwest corner, at road fork to steel bridge	47	59	26.50	122	01	51.69	1,379
At road forks, Granite Falls–Lake Roesiger; iron post stamped "Prim. Trav. Sta. No. 1, 1919. Elev. 294 feet"	47	59	57.10	122	00	33.46	6,160

Magnetic declination for quadrangle, 23° 36′ E.

SULTAN QUADRANGLE.

In west part of quadrangle. (By C. F. Urquhart in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road to State Reformatory	47	51	03.42	121	59	31.84	
Monroe, at corner of Main and Madison streets, in park in center of street, at foot of tall flagpole; iron post stamped "Prim. Trav. Sta. No. 5, 1919"	47	51	18.86	121	58	22.84	4,960
Monroe, intersection of Main and Lewis streets	47	51	22.36	121	58	11.68	840
Skykomish River, center of bridge over	47	50	48.95	121	58	09.91	3,387
Crossroads	47	50	29.87	121	58	06.24	1,949
T road	47	50	16.50	121	58	06.41	1,355
T road south at Tuako Farmers' Grange Hall	47	49	48.87	121	58	54.46	4,310
Center line of road, opposite district No. 7 schoolhouse	47	49	31.67	121	59	02.16	1,820
T road east	47	49	24.98	121	59	03.60	684
T road west	47	49	03.52	121	59	20.52	2,461
T road at Stevens's dairy ranch	47	48	50.42	121	59	19.83	1,328
Crossing on Chicago, Milwaukee & St. Paul Ry	47	48	46.55	121	58	56.38	1,649
High Rock siding, on Everett Branch of Chicago, Milwaukee & St. Paul Ry., 214 feet south of, 4 feet east of concrete highway; iron post stamped "Prim. Trav. Sta. No. 6, 1919. Elev. 45 feet"	47	48	45.42	121	58	53.75	215
Center of logging railroad	47	48	36.74	121	58	50.97	900
Dim road to Snoqualmie River	47	47	18.62	121	58	21.19	8,173
T road east, uphill	47	46	59.31	121	57	59.23	2,466
Lewis-Snohomish county line, end of concrete road	47	46	36.56	121	57	34.67	2,852
T road uphill, at H. L. Allen's mail box	47	46	05.60	121	57	15.95	3,388
Center of overhead railroad crossing, Chicago, Milwaukee & St. Paul Ry	47	46	03.87	121	57	22.47	478
Center of wooden bridge	47	45	59.90	121	57	34.93	940
At William McNutt's mail box, old barn opposite	47	45	45.38	121	58	04.85	2,518
Center of wooden bridge	47	45	18.07	121	58	46.95	3,991
Duvall, 0.25 mile north of, at covered bridge over Chicago, Milwaukee & St. Paul Ry., on east side of road, at east end of bridge; iron post stamped "Prim. Trav. Sta. No. 7, 1919. Elev. 87 feet"	47	44	47.31	121	59	04.20	3,331
Culvert under road	47	44	14.09	121	59	11.18	3,400
Private T road	47	43	34.08	121	59	09.38	4,056
Intersection of Corduroy road uphill	47	43	16.32	121	59	04.79	1,827
Novelty, crossroads on Chicago, Milwaukee & St. Paul Ry., point on highway in line from door of store to railroad crossing	47	42	34.56	121	58	59.56	4,246
Crossroads	47	42	17.88	121	58	57.66	1,695
T road	47	42	07.03	121	58	48.13	1,278
T road to farm west	47	41	43.78	121	58	18.64	3,102
Road to Carnation ranch	47	41	29.85	121	56	43.03	6,692
Opposite Stillwater School	47	41	06.94	121	55	35.25	5,187
Stillwater, 0.25 mile west-northwest of, at crossing of logging railroad; iron post stamped "Prim. Trav. Sta. No. 8, 1919. Elev. 80 feet"	47	41	04.33	121	55	22.98	882
Stillwater, center of bridge over creek at	47	41	00.34	121	55	10.59	940
Bridge over Harris Creek	47	40	43.09	121	54	23.70	3,654
Small bridge	47	40	27.33	121	54	22.07	1,601
Small bridge	47	40	18.49	121	54	28.11	986
Crossing on Chicago, Milwaukee & St. Paul Ry	47	40	03.99	121	54	25.42	1,481
Small bridge	47	39	53.24	121	54	30.29	1,139
Crossroads	47	39	33.63	121	54	34.31	2,006
Crossroads	47	39	20.55	121	54	37.63	1,345
Tolt, on Chicago, Milwaukee & St. Paul Ry., on right of way of spur line, 30 feet northeast of northeast corner of Tolt Hotel, 20 feet southeast of town hall; iron post stamped "Prim. Trav. Sta. No. 9, 1919. Elev. 77 feet"	47	38	45.66	121	54	53.71	3,703
Opposite high-school gate	47	38	34.79	121	54	52.47	1,105
T road west to Seattle, at south end of bridge over Tolt River	47	38	15.25	121	54	56.47	1,999
T road east	47	37	49.32	121	54	40.35	2,850
Griffith Creek, bridge over	47	37	02.77	121	54	31.63	4,755
Crossroads at school and gymnasium, district No. 39	47	36	57.13	121	54	34.19	597
Road to Pleasant Hill farm of M. V. L. Co.	47	36	19.41	121	54	47.90	3,935
Bridge over dry creek	47	35	24.80	121	54	49.22	5,534
At gate on west side of road, near turn of road, about 200 feet from Snoqualmie River	47	34	35.33	121	53	44.40	6,700
Bridge over small creek	47	34	31.42	121	53	24.83	1,400
Fall City, 0.5 mile north of, on north side of Snoqualmie River, 115 feet north of north end of concrete bridge; iron post stamped "Prim. Trav. Sta. No. 10, 1919. Elev. 92 feet"	47	34	10.51	121	53	12.35	2,285
T road east	47	33	42.91	121	51	52.84	6,129
T road west	47	33	42.80	121	51	39.17	938
T road west	47	33	20.13	121	50	34.45	4,999
Tokul Creek, center of bridge over	47	33	16.46	121	50	06.66	1,944
Snoqualmie Falls, road forks at signboard "National Park Highway"	47	32	33.39	121	50	06.20	4,364
T road, at north end of bridge over Snoqualmie River	47	32	26.50	121	49	57.94	900
Snoqualmie River, south end of bridge over	47	32	23.41	121	50	00.23	350

SULTAN QUADRANGLE—Continued.

In west part of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Snoqualmie, 0.5 mile north of, at crossing of spur line of Chicago, Milwaukee & St. Paul Ry. to the falls; iron post stamped "Prim. Trav. Sta. No. 11, 1919. Elev. 420 feet"	47	32	05.06	121	49	43.24	2,195
T road west	47	31	51.50	121	49	33.11	1,540
T road at Meadowbrook farm	47	31	34.19	121	48	45.01	3,739
Center of small bridge, 99N	47	30	50.93	121	47	53.70	5,623
Center of small bridge over creek	47	30	31.55	121	47	49.01	1,990
T road, 500 feet west of Snoqualmie bridge, at north bend	47	30	00.99	121	47	24.09	3,538
Along highways in northwest part of quadrangle.							
Center line of private road over curved wooden bridge	47	59	31.94	121	59	40.58	.....
T road	47	59	12.51	121	59	15.43	2,610
T road south	47	58	56.96	121	58	20.65	4,047
Railroad crossing (switch)	47	58	52.82	121	58	18.85	438
Center line of skid road	47	58	23.51	121	58	06.19	3,093
T road; iron post stamped "Prim. Trav. Sta. No. 2, 1919. Elev. 293 feet"	47	57	46.63	121	58	12.58	3,762
Center line of road, opposite district No. 54 schoolhouse	47	57	28.97	121	57	01.45	5,163
Center line of skid road	47	57	26.13	121	56	42.47	1,325
Center line of road, opposite flagpole at Mr. Sargenfrei's residence	47	57	49.93	121	56	15.56	3,029
Top of hill, opposite old road	47	57	48.11	121	55	49.23	1,802
At forks of road to Lake Roesiger, 14 feet north of east and west road, 30 feet east of road north, about 1 mile south of Lake Roesiger; iron post stamped "Prim. Trav. Sta. No. 3, 1919. Elev. 570 feet"	47	57	59.89	121	55	18.66	2,407
Center of bridge	47	57	55.10	121	55	04.46	1,084
Center of bridge over Woods Creek	47	57	03.97	121	53	16.20	9,009
Opposite trail to Lake Chaplain	47	56	54.37	121	53	25.54	1,162
Center of bridge over creek	47	56	40.52	121	53	37.80	1,632
Opposite flagpole at schoolhouse	47	55	44.71	121	53	53.16	5,751
T road to farm	47	55	21.74	121	53	57.62	2,348
Center of bridge over gully	47	54	35.90	121	54	27.18	5,062
Crossing on abandoned logging railroad; iron post stamped "Prim. Trav. Sta. No. 4, 1919. Elev. 195 feet"	47	54	13.01	121	54	20.13	2,368
Junction of two roads from Monroe	47	52	54.40	121	54	56.33	8,339
Center of bridge	47	52	35.74	121	54	54.99	1,893
Center of bridge	47	52	19.73	121	55	10.69	1,943
T road to farm	47	52	09.26	121	55	33.93	1,907
Center of triangle at intersection of Woods Creek, Lake Roesiger, and Wagner Wilson roads, 2 miles north of Monroe	47	52	11.89	121	56	19.73	3,132
Bridge over small creek	47	52	09.26	121	56	39.52	1,374
Monroe, crossing of Chicago, Milwaukee & St. Paul Ry	47	51	31.89	121	57	53.00	6,280
Monroe, corner of Main and Ann streets	47	51	28.14	121	57	53.19	380
Monroe, "Prim. Trav. Sta. No. 5, 1919" (described selsewhere)	47	51	18.86	121	58	22.84	2,230
From Monroe to Index along Great Northern Ry.							
Monroe, corner of Main and Ann streets	47	51	28.14	121	57	53.19	.....
Monroe, overhead crossing of Chicago, Milwaukee & St. Paul Ry.	47	51	24.23	121	57	24.54	1,994
Monroe, 1-mile post from	47	51	24.77	121	56	37.24	3,229
Road crossing	47	51	21.52	121	55	34.77	4,273
Monroe, 3 miles east of, 100 feet west of road crossing, 18 feet west of semaphore 17658–10, 10 feet south of south rail of Great Northern Ry.; iron post stamped "Prim Trav. Sta. No. 13, 1919. Elev. 86 feet"	47	51	17.69	121	54	24.70	4,795
Semaphore 17639–40	47	51	08.10	121	52	06.71	9,461
Road crossing	47	51	04.36	121	51	33.57	2,292
Sultan, junction with logging railroad	47	51	08.73	121	51	06.03	1,930
Road crossing	47	51	29.47	121	49	48.34	5,700
Center of large highway bridge over Sultan River	47	51	40.12	121	49	12.49	2,673
Sultan, corner of Sixth and Main streets, 20 feet east of electric-light pole, 1 foot from edge of curb; iron post stamped "Prim. Trav. Sta. No. 14, 1919. Elev. 111 feet"	47	51	46.03	121	48	44.93	1,972
T road south	47	51	48.06	121	48	13.09	2,181
T road north	47	51	52.25	121	47	56.37	1,217
T road south, down hill	47	51	52.27	121	47	45.37	750
Great Northern Ry., 60 feet east of road crossing	47	51	44.18	121	47	45.17	820
Skykomish River, temporary wooden bridge over, center of pier	41	51	44.59	121	47	18.55	1,816
Road crossing	47	51	44.92	121	46	56.28	1,519
Skykomish Slough, center of bridge over	47	51	49.86	121	45	46.41	4,791
Road crossing	47	51	58.07	121	44	40.06	4,600

SULTAN QUADRANGLE—Continued.

From Monroe to Index along Great Northern Ry.—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Startup, west end of station platform, 4 feet north of north rail of Great Northern Ry. main line; iron post stamped "Prim. Trav. Sta. No. 15, 1919. Elev. 154 feet"	47	52	00.64	121	44	19.97	1,394
Crossroads	47	52	00.90	121	44	17.70	157
Center of bridge 440, over Wallace River	47	51	59.47	121	43	38.24	2,695
Culvert at milepost 175	47	51	45.25	121	42	43.64	3,993
Gold Bar station, west corner	47	51	25.28	121	42	04.85	3,330
Gold Bar, 0.5 mile east of, 70 feet east of road crossing, 7 feet south of south rail of Great Northern Ry., 16 feet east of semaphore; iron post stamped "Prim. Trav. Sta. No. 16, 1919. Elev. 203 feet"	47	51	02.28	121	41	20.39	3,824
Reiter flag station, between posts supporting sign, 13 feet south of south rail of Great Northern Ry.; iron post stamped "Prim. Trav. Sta. No. 17, 1919"	47	50	23.72	121	37	20.92	16,797
Center of trestle 480	47	50	15.83	121	36	35.26	3,216
Trestle 438/3, over dry creek bed	47	50	09.41	121	36	33.59	660
Trestle 438/2	47	50	01.39	121	36	36.00	830
Trestle 438/1	47	49	56.68	121	36	40.15	555
Trail leading to settlers' suspension bridge over Skykomish River	47	49	05.63	121	36	05.70	5,681
Railroad track trestle, 42-inch pipe culvert under	47	49	07.33	121	35	33.73	2,189
Trestle	47	49	08.64	121	35	24.02	676
Trestle 438, under overhead crossing at highway	47	48	58.66	121	34	57.83	2,053
Index, at station, 40 feet southwest of agent's window, 26 feet southwest of track; iron post stamped "532T, Prim. Trav. Sta. No. 18, 1919"	47	49	15.28	121	33	20.86	6,829

From Index along highway checking at Primary Traverse stations Nos. 16, 15, and 14.

Prim. Trav. Sta. No. 18 (described elsewhere)	47	49	15.28	121	33	20.86	.....
East end of long wooden bridge	47	48	56.62	121	34	48.50	6,274
Center of highway bridge over Great Northern Ry. trestle 438	47	48	58.48	121	34	57.93	671
Center of small bridge over creek	47	49	09.30	121	35	24.10	2,095
Trail to lookout point	47	49	53.36	121	36	30.42	6,357
Center of creek, 50 feet north of bridge at sharp curve in road	47	50	01.83	121	36	09.94	1,640
Devils Elbow	47	50	15.96	121	36	11.13	1,434
Private road to copper smelter	47	50	43.37	121	37	36.18	6,432
Private-road crossing	47	50	37.47	121	40	32.26	12,025
Prim. Trav. Sta. No. 16 (described elsewhere)	47	51	02.28	121	41	20.39	4,140
Gold Bar station, west end of	47	51	25.38	121	42	05.31	3,850
Center of bridge	47	51	50.84	121	42	52.85	4,143
Mays Creek, center of steel bridge over	47	52	01.08	121	43	28.70	2,656
Prim. Trav. Sta. No. 15 (described elsewhere)	47	52	00.64	121	44	19.97	3,509
Road crossing	47	51	58.09	121	44	40.20	1,390
T road north	47	52	23.22	121	45	16.02	3,524
T road north	47	52	05.19	121	46	09.84	4,100
T road north	47	52	01.99	121	46	36.25	1,830
T road south, down hill	47	51	52.26	121	47	45.45	4,820
Prim. Trav. Sta. No. 14 (described elsewhere)	47	51	46.03	121	48	44.93	4,113
Sultan River, center of steel bridge over	47	51	39.99	121	49	12.81	1,989
T road south across railroad track	47	51	30.34	121	49	48.25	2,607
Logging road north	47	51	50.70	121	50	07.13	2,432
Crossing of logging railroad	47	51	49.86	121	51	08.55	4,189
T road south	47	51	50.52	121	52	58.82	7,520
T road north to logging camp	47	51	50.66	121	54	18.85	5,457
T road south	47	51	50.01	121	56	31.42	9,040
Monroe, southwest corner of Main and Ann streets	47	51	28.14	121	57	53.19	6,011

From Fall City to Preston.

Prim. Trav. Sta. No. 10, 1919 (described elsewhere)	47	34	10.51	121	53	12.35	.....
T road east to Fall City station	47	33	48.53	121	53	23.11	2,351
T road west over bridge over Raging River	47	33	19.27	121	53	55.76	3,718
Overhead crossing of Northern Pacific Ry	47	32	40.77	121	54	11.74	4,057
Center of bridge over Raging River	47	32	25.91	121	54	28.65	1,620
T road west to railroad station	47	31	25.74	121	55	38.98	7,778
Center of Northern Pacific Ry. crossing, 250 feet east of schoolhouse, check on line run in 1910	47	31	22.6	121	55	55.1	1,145
Preston, south end of loading platform, 25 feet east of railroad; iron post stamped "Prim. Trav. Sta. No. 19, 1919. Elev. 503, Wash. 1915"	47	31	27.56	121	55	44.0	911

Magnetic declination for quadrangle, 23° 36′ E.

VIRGINIA.

PRIMARY TRAVERSE.

Arringdale, Aylett, Beaver Dam, Bermuda Hundred, Bowling Green, Boykins, Camp Abraham Eustis, Camp Humphreys, Cape Henry, Charles City, Dinwiddie, Disputanta, Doswell, Emporia, Heathsville, Holland, Homeville, Ivor, Jarratt, Kara, Kilmarnock, King William, Lawrenceville, McKenney, Montross, Morattico, Moyock, New Kent, Newport News, Petersburg, Piney Point, Port Royal, Richmond, Smithfield, South Hill, Suffolk, Surry, Tappahannock, Toano, Urbanna, Virginia Beach, Wellville, White Plains, Williamsburg, and Yorktown quadrangles.

BRUNSWICK, CAROLINE, CHARLES CITY, DINWIDDIE, ESSEX, FAIRFAX, GREENSVILLE, HANOVER, ISLE OF WIGHT, JAMES CITY, KING AND QUEEN, KING WILLIAM, MIDDLESEX, NANSEMOND, NEW KENT, PRINCE GEORGE, PRINCESS ANNE, SOUTHAMPTON, SURRY, SUSSEX, WARWICK, AND YORK COUNTIES.

The following geographic positions on North American datum were determined in 1916, 1917, and 1918, by J. J. Charters, J. C. Fales, F. J. McMaugh, E. L. McNair, J. J. Phelan, A. C. Schilling, H. J. Switzer, and J. H. Wilson, as indicated at the head of the several quadrangle lists.

For other positions in Virginia see U. S. Geological Survey Bulletins 122, 181, 245, 310, 440, 496, 551, and 644, and the unpublished records of the U. S. Coast and Geodetic Survey and the Chief of Engineers, U. S. Army.

ARRINGDALE QUADRANGLE.

Southwest along Southern Ry. through northwest corner of quadrangle. (By H. J. Switzer in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Trestle (A. J. 4.8), east end of	36	44	35.5	77	24	17.0	.....
Road crossing	36	44	02.5	77	25	04.3	5,091
Grizzard, about 200 feet west of depot, 15 feet north of track, 20 feet east of highway; iron post stamped "Prim. Trav. Sta. No. 10, 1918"	36	43	28.6	77	26	21.3	7,145
Road crossing	36	43	23.0	77	26	42.9	1,844
Trestle (A. J. 1.5), east end of	36	42	57.0	77	27	06.2	3,250
Iron-pipe culvert	36	42	29.0	77	27	50.6	4,587
James River Junction, point of switch	36	42	13.3	77	28	28.3	3,461
Road crossing	36	42	13.0	77	28	41.2	1,051
Crossing, second-class road	36	42	12.1	77	29	23.1	3,413
Along highways.							
Pipe culvert, center of	36	38	45.6	77	29	57.7	.....
Faison School, 135 feet north of north corner of, 38 feet west of road; iron post stamped "Prim. Trav. Sta. No. 1, 1918"	36	38	22.9	77	28	32.0	7,353
T road west at R. F. D. box "Williams"	36	37	54.9	77	27	46.5	4,664
T road west, front of store	36	37	21.6	77	27	04.8	4,790
Center of road, front of store	36	36	47.0	77	26	34.5	4,280
T road east	36	36	18.9	77	25	56.3	4,219
T road west	36	35	43.6	77	25	25.8	4,358
Intersection of roads to Haley's bridge and Gaskins	36	35	18.7	77	24	57.1	3,437
T road west	36	34	48.1	77	24	09.0	4,997
T road east	36	34	20.3	77	22	44.6	7,432
Intersection of roads	36	34	10.8	77	22	16.0	2,523
Hugo station	36	32	55.1	77	17	49.5	.....
Road crossing	36	33	08.0	77	17	21.1	2,653
Cattle guard, near schoolhouse	36	33	36.4	77	16	18.7	5,851
Road crossing	36	33	52.7	77	15	42.8	3,360

ARRINGDALE QUADRANGLE—Continued.

North along highways near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Culvert under road	36 34 37.3	77 16 13.8	.....
Culvert under road	36 34 39.9	77 16 38.8	2,055
T road north	36 34 38.1	77 17 09.0	2,468
Road south	36 34 56.7	77 18 29.6	6,841
Center of road, in front of store	36 35 24.7	77 19 19.6	4,962
Little Texas, in grass triangle, 15 feet south of telegraph pole; iron post stamped "Prim. Trav. Sta. No. 7, 1918"	36 36 07.7	77 20 23.4	6,785
T road west	36 36 48.5	77 20 24.3	4,131
Center of road, opposite gate	36 37 49.5	77 20 02.3	6,422
T road west	36 38 09.0	77 19 41.9	2,585
Box culvert, center of	36 38 28.4	77 18 54.7	4,315
Fork in road, road south	36 38 38.8	77 17 55.0	4,981
Bradley's lane	36 39 08.4	77 17 37.0	3,333
Fork in road, roads north and east, line turns north	36 39 23.6	77 17 18.0	2,185
South end of small bridge	36 40 19.8	77 17 04.3	5,791
Center of small bridge over creek	36 41 01.5	77 17 05.9	4,221
Intersection of roads to Branchville and Drewryville	36 41 41.8	77 17 07.8	4,080
Intersection of roads to Drewryville and Emporia	36 42 16.3	77 18 21.2	6,923

West along Southern Ry. through north half of quadrangle.

Drewryville railroad station, 160 feet west of west end of, 10 feet south of south rail of south track; iron post stamped "Prim. Trav. Sta. No. 8, 1918"	36 42 56.6	77 18 28.7	4,126
Road crossing, north rail at	36 42 58.8	77 19 10.9	3,439
Arringdale station, opposite east door of, center of south track	36 43 02.3	77 20 14.4	5,180
Farm-road crossing, north rail at	36 42 22.4	77 21 25.5	7,059
Culvert, 30-inch cast iron, near milepost 64	36 41 50.3	77 22 27.5	6,002
Adams Grove railroad station, 50 feet west of west end of, 6 feet north of track; iron post stamped "Prim. Trav. Sta. No. 9, 1918"	36 41 34.8	77 23 12.6	3,994
Road crossing, north rail at	36 41 29.8	77 23 31.0	1,585
Road crossing, north rail at	36 41 31.9	77 24 06.9	2,932
Road crossing	36 41 31.3	77 24 53.9	3,826
Iron-pipe culvert, south rail at	36 41 40.3	77 26 19.8	7,058
Green Plain station, east end, on north rail	36 41 48.7	77 27 09.0	4,092
Road crossing, north rail at	36 41 58.9	77 27 46.3	3,211
James River Junction, point of switch at	36 42 13.3	77 28 28.3	3,718

Along highways near northeast corner of quadrangle.

Bridge 209 feet long, southeast end of (distance from Primary Traverse Station No. 8)	36 43 16.3	77 18 34.0	2,037
Bridge 15 feet long, southeast end of	36 43 43.3	77 19 08.0	3,887
Bridge 12 feet long, south end of	36 43 53.6	77 19 26.1	1,807
Bridge, south end of	36 44 44.2	77 19 22.4	5,123

Along highways from Gaskins to Little Texas.

Meherrin River, west end of Haley's bridge over	36 34 12.0	77 21 43.0	2,701
Bridge 30 feet long, south end of	36 34 29.7	77 21 27.5	2,200
Culvert, 24-inch galvanized iron	36 35 09.0	77 21 15.4	4,106
Little Texas, Prim. Trav. Sta. No. 7 (previously listed)	36 36 07.7	77 20 23.4	7,299

North along highways near Meherrin River.

Meherrin River bridge, 1.10 miles from junction of Gaskins-Margarettsville roads, 40 feet north of north end of bridge; iron post stamped "Prim. Trav. Sta. No. 6, 1918"	36 33 05.8	77 22 06.2	.....
Logging railroad, crossing on	36 33 13.0	77 22 25.3	1,730
Fork in road, northwest	36 33 44.2	77 22 31.2	3,187
Intersection of roads (duplicate)	36 34 10.8	77 22 16.0	2,968

Magnetic declination for east border of quadrangle, 4° 10′ W.; for south border, 3° 54′ W.; for center, 4° 10′ W.; for southeast corner, 4° 30′ W.

East along Southern Ry. (By J. J. Phelan in 1917.)

Drewryville, Prim. Trav. Sta. No. 8 (Switzer)	36 42 56.6	77 18 28.7	.....
Milepost 59, south rail opposite	36 43 04.1	77 17 35.6	4,394
Center of road, at signboard marked "Drewryville 1 mile"	36 43 06.7	77 17 18.9	1,383
Milepost 58, south rail opposite	36 43 04.5	77 16 31.4	3,869
Center of road crossing, 0.25 mile east of milepost 58	36 43 05.7	77 16 14.5	1,385
Center of road crossing, 0.20 mile west of milepost 57, south rail	36 43 10.7	77 15 34.6	3,285

AYLETT QUADRANGLE.

Along highways in extreme southwest corner of quadrangle. (By E. L. McNair in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks, road northwest	37	45	58.0	77	14	42.6	.....
Crossroads, roads north and south	37	45	25.1	77	13	44.3	5,744
Along highways east to west through north half of quadrangle.							
Prim. Trav. Sta. No. 27, 0.75 mile west of Dunbrooke	37	53	56.8	76	58	39.1	.....
Crossroads	37	53	52.9	77	00	32.0	.....
Road north	37	54	09.7	77	01	29.9	4,949
Indian Neck post office, road forks at, in line with road northwest to Newtown and southwest to Cauthornville	37	54	08.2	77	02	00.1	2,424
Road forks, center of small grassy triangle at	37	54	36.7	77	02	44.7	4,591
T lane southwest	37	54	28.5	77	04	07.4	6,681
T road southwest	37	54	38.2	77	04	25.7	1,768
T road northeasterly	37	54	59.6	77	06	18.8	9,323
T road northeasterly	37	54	41.2	77	07	23.0	5,471
Newtown, 60 feet east and 15 feet south of crossroads at, 15 feet south of road, 4 feet inside fence, in yard of T. J. Bates; iron post stamped "Prim. Trav. Sta. No. 33, 1916"	37	54	48.8	77	07	41.4	1,661
T road north	37	54	57.4	77	08	43.8	5,080
Road fork, 70 feet east of old sign post	37	55	04.6	77	09	14.0	2,523
Road forks	37	54	39.8	77	10	42.3	7,509
Center of small wooden-truss bridge over Maracossic Creek, on line between King and Queen County and Caroline County	37	54	47.7	77	11	07.4	2,171
Road forks, road northeast	37	54	52.4	77	11	53.6	3,727
Gether post office and store, T road south at (junction point)	37	54	59.7	77	12	24.3	2,567
Mattaponi River, center of wooden bridge over, line between Caroline and King William counties	37	54	09.2	77	12	58.2	5,783
T road corners, road north	37	52	46.9	77	13	13.5	8,418
T road corners	37	52	28.6	77	13	50.7	3,509
Duane post office, 15 feet north and 5 feet east of T road corners at, in line with road southwest, about 35 feet S. 60° W. from southwest corner of store; iron post stamped "Prim. Trav. Sta. No. 34, 1916" (junction point)	37	52	01.1	77	14	49.0	5,437
Ford crossing small brook	37	52	26.0	77	14	59.5	2,657
Road forks in Doswell quadrangle	37	52	37.3	77	15	00.2	1,143

Magnetic declination for southwest corner of quadrangle, 5° 00′ W.; for center of north half of quadrangle, 5° 00′ W.

East along highways near north border of quadrangle.

Road forks	37	59	20.8	77	14	38.5	.....
Road forks, point is in line with roads in three directions	37	59	26.6	77	14	22.2	1,428
Sparta post office and store, 50 feet east of, 35 feet west of forks of road, across road opposite house of Dr. Campbell, on bank in front of house of Mrs. Rolfe (Rolfe estate); iron post stamped "Prim. Trav. Sta. No. 40, 1916"	37	59	30.6	77	13	47.0	2,851
Mill race, center of small wooden bridge over	37	59	25.2	77	12	53.2	4,338
Road forks, road south	37	59	20.8	77	12	17.9	2,867
Road forks, road south	37	59	28.8	77	11	46.7	2,622
Road forks, road north	37	59	34.0	77	11	25.0	1,818
Crossroads	37	59	40.9	77	10	48.6	3,000
Alps post office, T road east at	37	59	31.7	77	10	45.2	966
Road forks	37	59	22.7	77	09	51.6	4,394
Small creek, center of wooden bridge over	37	59	29.9	77	09	10.3	3,381
Central Point, forks of road just east of church at, about 50 feet east of line of road going south	37	59	20.1	77	07	54.3	6,170
Central Point post office and store, 75 feet northeast of, 40 feet north and 3 feet east of T road corners, 1.5 feet inside fence in yard of M. W. Bird (colored); iron post stamped "Prim. Trav. Sta. No. 41, 1916"	37	59	26.9	77	07	44.8	1,023
T road south, 160 feet east of bridge over small creek	37	58	50.5	77	07	09.4	4,641
Road forks, at old signboard	37	58	32.6	77	06	27.2	3,834
Crossroads, road north and second-class road south	37	58	31.1	77	05	07.4	6,400
T road east at store	37	58	29.2	77	04	12.4	4,405

AYLETT QUADRANGLE—Continued.

South along highways near west border of north half of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Prim. Trav. Sta. No. 40, Sparta post office	37	59	30.56	77	13	46.99	
Ford of small stream	37	58	54.6	77	13	33.0	3,801
Road forks, second-class road north	37	58	45.8	77	12	46.2	3,856
Road forks at colored church	37	58	13.3	77	12	33.4	3,441
Center of bridge over creek	37	57	27.9	77	13	21.9	6,017
Center of small wooden span bridge	37	57	13.8	77	14	00.2	3,390
T road west in woods	37	56	29.7	77	14	03.4	4,463
Bagby post office and store, 130 feet west of, 15 feet south of main mail road, in line with road north to Sparta, 4 feet west of telephone pole; iron post stamped "Prim. Trav. Sta. No. 42, 1916"	37	55	33.3	77	13	52.0	5,784
Private road east	37	55	25.6	77	13	23.0	2,451
T road northeast	37	55	03.9	77	12	50.7	3,392
Gether post office	37	54	59.7	77	12	24.3	2,162

Along highway north-south through center of quadrangle.

Prim. Trav. Sta. No. 34, at Newtown	37	54	48.8	77	07	41.4	
Road fork	37	54	01.4	77	08	01.0	5,039
T road northeast	37	52	51.2	77	08	39.5	7,744
T road northeast	37	52	21.4	77	08	10.1	3,828
Ford of small creek	37	52	16.4	77	08	04.6	676
Road forks, T road east	37	51	56.8	77	07	48.4	2,366
T road easterly	37	51	02.4	77	07	26.3	5,787
T road north	37	50	29.2	77	07	11.9	3,547
Center of bridge over creek	37	50	08.1	77	07	04.4	2,215
T road northeasterly	37	49	46.6	77	06	33.9	3,273
T road northeast and farm road southwest	37	49	20.9	77	06	08.2	3,323
T road east to Biscoe	37	49	01.1	77	05	53.5	2,324
Mattaponi River, center of bridge truss over line between King and Queen County and King William County	37	48	48.8	77	05	58.2	1,298
Beulahville, 5.3 miles southeast of, 1.25 miles west of bridge across Mattaponi River, about 75 feet north and 50 feet east of T road corners, road southeast to Aylett and northwest to Beulahville, 25 feet east of road to Dunkirk Landing, just inside wire-fence line, 8 feet south of cedar tree; iron post stamped "Prim. Trav. Sta. No. 43, 1916"	37	48	06.9	77	06	57.5	6,377
Center of concrete bridge over creek	37	48	35.9	77	07	31.0	3,983
Road forks	37	48	41.7	77	07	47.1	1,418
Road forks, second-class wood road	37	49	50.4	77	08	55.8	8,880
Private road east	37	50	25.3	77	09	17.5	3,932
Road forks, T road southwest	37	50	33.6	77	09	27.1	1,131
Road forks, road northeast	37	50	51.1	77	09	49.3	2,514
Beulahville, crossroads at	37	51	19.0	77	10	44.8	5,275
T road north	37	52	05.6	77	11	52.8	7,205
Carlton store, T road southwest at	37	52	20.0	77	12	08.8	1,937
T road corners	37	52	46.9	77	13	13.5	5,865

Magnetic declination near north border of quadrangle, 5° 20′ W.; near center of quadrangle, 5° 18′ W.; in southwest quarter of quadrangle, 5° 00′ W.

Along highways in northeast quarter of quadrangle.

Lloyds post office, about 0.75 mile southeast of, 200 feet N. 64° W. from northwest corner of Essex Church, in line with road west and close to forks of road; iron post stamped "Prim. Trav. Sta. No. 26, 1916"	37	59	28.8	77	00	17.8	
Banks post office (discontinued), about 400 feet northeast from Lovings, at line between Essex and Caroline counties	37	59	39.2	77	04	20.7	
T road east at store	37	58	29.2	77	04	12.4	7,108
Beazley's, T road west, 125 feet north of store	37	57	53.7	77	04	13.6	3,598
T road north	37	57	34.3	77	02	53.8	6,686
Road forks, 7 feet southeast of pine tree	37	57	16.7	77	02	19.7	3,254
Road forks, road south	37	56	52.2	77	01	44.3	3,766
Crossroads, second-class roads north and south	37	56	47.3	77	01	05.9	3,119
Private road southwest	37	56	47.6	77	00	29.5	2,911

Magnetic declination for northeast quarter of quadrangle, 4° 50′ W.

BEAVER DAM QUADRANGLE.

South along highways near east border of south half of quadrangle. (By. E. L. McNair in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Little River, center of wooden bridge over	37 50 44.7	77 30 21.7	.....
Road forks	37 50 21.9	77 30 59.8	3,828
T road south and a little west	37 50 02.9	77 30 36.7	2,672
New Found River, ford	37 49 19.7	77 30 44.7	4,413
Road west	37 48 50.6	77 30 41.1	2,954
South Anna River, bridge over, center of wooden span on	37 48 12.0	77 30 31.2	3,988
Road forks	37 47 42.2	77 30 15.1	3,276
Crossroads	37 47 27.4	77 30 12.1	1,518
T road southwest	37 46 51.7	77 30 31.9	3,948

Magnetic declination for east border of south half of quadrangle, 5° 00′ W.

BERMUDA HUNDRED QUADRANGLE.

Near east border of quadrangle. (By E. L. McNair in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Malvern Hill post office, 2 miles northwest of, river road at road northeast to Elko, at northwest corner; iron post stamped "Prim. Trav. Sta. No. 56, 1916"	37 24 20.2	71 15 58.4	.....

Magnetic declination for east border of quadrangle, 4° 13′ W.

BOWLING GREEN QUADRANGLE.

East along highways near south border of quadrangle (spur line). (By E. L. McNair in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads, second class	38 00 01.1	77 25 53.8	.....

East along highways near south border of quadrangle (main circuit).

T road east, second class	38 00 07.0	77 24 57.6	.....
T road north	38 00 52.5	77 24 44.2	4,724
Road forks, 85 feet westerly from schoolhouse	38 00 49.9	77 23 22.9	6,511
Road forks	38 00 57.0	77 23 03.5	1,715
Mattaponi River, center of concrete bridge over	38 01 08.0	77 22 38.6	2,284
Milford, on main line of Richmond, Fredericksburg & Potomac R. R., road crossing; center of tracks	38 01 21.0	77 22 28.7	1,531
Road forks	38 00 57.2	77 21 16.4	6,262
Bowling Green, 2 miles south of, 20 feet from road and in line with road southwest, location of old Antioch Church, 10 feet north of driveway to house on east side of road; iron post stamped "Prim. Trav. Sta. No. 39, 1916"	38 01 04.0	77 20 17.9	4,739
Road forks	38 00 17.6	77 19 52.1	5,130

Magnetic declination near south border of quadrangle, 5° 15′ W.

BOYKINS QUADRANGLE.

Southwest along highways near east border of quadrangle. (By J. J. Phelan in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of small culvert crossing road, about 168 feet south of G. W. Thomas's mail box, on west edge of road	36	36	42.2	77	00	19.3	.....
Center of small bridge over drainage ditch	36	35	56.2	77	00	42.0	5,007
Sunbeam, southeast corner of crossroads, 10 feet from corner fence post diagonally opposite Drake's store	36	35	16.4	77	01	41.7	6,317
South along highways near east border of quadrangle.							
Story, middle of railroad crossing, south rail, marked by nail driven in plank	36	42	17.4	77	00	42.1	.....
Center of road, at north end of bridge	36	41	24.6	77	01	02.7	5,594
T road, center of	36	41	16.2	77	01	16.9	1,438
T road, center of Franklin-Courtland road, 28 feet east of east end of bridge	36	40	59.3	77	00	50.9	2,726
T road northwest	36	40	04.1	77	00	36.0	5,715
T road east, 7 feet from fence and 15 feet southwest of mail box 62	36	39	29.5	77	00	18.0	3,796
North along highways and railway.							
Southwest angle of triangle where three roads meet, near C. Holland's house	36	33	07.4	77	01	22.7	.....
Beeman's Creek, south side of river, east edge of road at flour mill, 14 feet from dam gate	36	33	11.7	77	01	08.2	1,262
West side of wheel track, 36 feet northwest of T. H. Edson's mail box	36	33	53.2	77	01	08.7	4,192
T road southeast, center line of road east and west	36	34	38.9	77	01	15.2	4,655
Sunbeam, in front of A. Storey's house, center of road	36	34	53.3	77	01	22.9	1,587
Sunbeam, about 1,000 feet northwest of school, crossroads at store	36	35	16.6	77	01	42.0	2,823
Sunbeam, 90 feet southeast of church door, T road southwest	36	35	36.5	77	01	58.2	2,408
Center of small culvert, 382 feet south of R. B. Gray's house	36	36	36.0	77	02	36.1	6,771
Handsom, 2 miles west of, in front of church, center of crossroads	36	37	00.0	77	02	46.0	2,550
T road west, about 8 feet from a point 10 feet south of J. T. Barrett's mail box	36	37	57.7	77	02	59.6	5,946
Road crossing, over fourth cross tie from first rail joint west of, north rail of Seaboard Air Line Ry	36	38	29.4	77	03	11.2	3,338
Milepost 44, north track opposite	36	38	32.3	77	02	12.0	4,831
Hand station, about 30 feet southwest of corner of depot, in corner of field; iron post stamped "Prim. Trav. Sta. No. 9P, 1918"	36	38	32.7	77	01	50.5	1,753
Milepost 43, north rail opposite	36	38	38.7	77	01	08.0	3,514
Delaware, 0.5 mile west of, west end of second bridge west of, north rail	36	38	43.6	77	00	51.4	1,443
Delaware, west end of bridge over Nottoway River	36	38	54.3	77	00	15.3	3,138
Milepost 42, north rail opposite	36	38	56.7	77	00	07.3	697

Magnetic declination near east border of quadrangle, 4.5° W.

Southeast along Seaboard Air Line Ry. (By H. J. Switzer in 1918.)

Prim. Trav. Sta. No. 5, 1918 (previously listed)	36	34	13.5	77	14	57.4	.....
Stone culvert	36	34	25.3	77	14	30.7	2,480
Road crossing, south rail	36	34	34.4	77	13	57.2	2,884
Farm-road crossing, south rail	36	34	43.9	77	13	18.3	3,315
Boykins, 50 feet south of south rail of Seaboard Air Line Ry., 30 feet north of north rail of Roanoke & Tar River Branch, west of road crossing; iron post stamped "Prim. Trav. Sta. No. 14, 1918". Azimuth to top of steeple, 279° 57′ 10″	36	34	59.6	77	12	11.9	5,644
Road crossing, west rail	36	34	07.1	77	12	09.7	5,307
Farm-road crossing, west rail	36	33	38.1	77	12	04.8	2,964
State-line post, west rail opposite	36	32	43.2	77	11	55.6	5,596

BOYKINS QUADRANGLE—Continued.

East along Southern Ry. in north part of quadrangle. (By J. J. Phelan in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
West end of bridge 56.2	36	43	05.7	77	14	39.0	.....
Road crossing at water tank, 800 feet east of milepost 56	36	43	01.7	77	14	12.2	2,222
West end of bridge, south rail	36	42	59.1	77	13	43.3	2,363
Milepost 55, north rail	36	42	53.4	77	13	21.8	1,842
Capron, 0.5 mile west of, at west end of bridge, south rail	36	42	45.0	77	12	39.3	3,566
Milepost 54, south rail	36	42	39.9	77	12	19.8	1,672
Capron, center of road crossing, south rail	36	42	40.5	77	12	00.8	1,548
Milepost 53, south rail	36	42	49.4	77	11	16.4	3,726
Milepost 52, south rail	36	43	11.8	77	10	18.9	5,200
Pope, road crossing, south rail at center line	36	43	10.2	77	10	02.0	1,386
Pope, 0.25 mile east of, north rail at west end of bridge	36	43	04.7	77	09	40.5	1,831
Pope, 0.875 mile east of, 730 feet east of milepost 51, road crossing on main county road	36	42	58.9	77	09	07.2	2,777
Pope, 1 mile east of, west end of bridge	36	42	55.7	77	08	47.3	1,651
Milepost 50, south rail	36	42	51.5	77	08	12.1	2,896
West end of bridge 49.3	36	42	53.4	77	07	25.5	3,804
Milepost 49, south rail	36	42	54.6	77	07	07.4	1,471
North end of bridge 48.4	36	42	56.7	77	06	30.8	2,987
Milepost 48, south rail	36	42	57.7	77	06	02.7	2,293
West end of bridge 47.6	36	42	58.5	77	05	39.4	1,895
Road crossing, 200 feet east of milepost 47	36	42	59.9	77	04	55.4	3,589
West end of long bridge over Nottoway River into Courtland	36	43	00.4	77	04	39.9	1,264
Courtland, west end of station	36	43	04.3	77	04	07.9	2,633
Courtland, 3.3 feet west of first rail joint east of road crossing at milepost 46, south rail	36	43	05.1	77	03	53.8	1,148
Courtland, 0.75 mile east of, center of road crossing	36	42	57.6	77	03	23.6	2,568
Milepost 45, south rail	36	42	49.7	77	02	51.7	2,725
Road crossing, near milepost 44	36	42	35.6	77	01	55.2	4,812
Milepost 43, south rail	36	42	18.8	77	00	47.8	5,748
Story, road crossing	36	42	17.4	77	00	42.1	482
Story, southwest corner of road crossing and Southern Ry. crossing, near corner of wire fence; iron post stamped "Prim. Trav. Sta. No. 11P, 1918"	36	42	17.3	77	00	42.4	28

Southwest along highways in northeast corner of quadrangle.

T road northeast near K. Sykes's mail box 37, outer edge of road southeast and center line of T road	36	44	12.6	77	02	11.4	.....
Center of crossroads, 16 feet west of tree with sign "2 miles to W. T. Davis's Grocery"	36	44	17.9	77	02	22.5	1,050
Center of road, opposite Patton's paint sign "1 mile to Courtland"	36	43	28.9	77	03	16.9	6,642
T road north, 6 feet from fence on road northeast and southwest	36	43	25.2	77	03	22.9	612
Courtland, road crossing	36	43	05.1	77	03	53.8	3,235

Mean magnetic declination for southeast corner of quadrangle, 4.1° W.

South near west border of quadrangle. (By J. J. Phelan in 1918.)

T road west	36	42	14.1	77	12	19.2	.....
Center of culvert	36	41	43.4	77	12	55.2	4,270
West edge of road, in line with center of T road east, 28 feet from C. B. Smith's mail box	36	41	15.3	77	13	14.8	3,258
T road west at mail box No. 8	36	40	46.6	77	13	36.8	3,414
Angle of road forks, 18 feet from center of road to northeast and 30 feet from center of road to northwest	36	40	30.6	77	14	09.3	3,105
Road forks, on north edge of road to north and east, 10 feet from center of culvert	36	40	18.1	77	14	16.1	1,380
East edge of road, 45 feet south of T road east and 500 feet north of John Johnson's residence	36	39	50.4	77	13	43.3	3,873
Road forks, on west edge of north and south road at, 75 feet south of E. L. Sommon's mail box, No. 15	36	39	33.7	77	13	41.2	1,705
Boykins, about 5.5 miles north of, on west side of road, in front of A. L. Drewey's residence, 28 feet south of mail box; iron post stamped "Prim. Trav. Sta. No. 12P, 1918"	36	38	47.6	77	12	57.8	5,860
Milepost "Boykins 5", on east side of road, 26 feet north of	36	38	29.4	77	12	45.5	2,091
East edge of road, 4 feet from southeast corner of small bridge	36	38	01.2	77	12	32.8	3,039
Milepost "Boykins 4"	36	37	42.5	77	12	31.1	1,893
Road forks at milepost "Boykins 3"	36	36	55.9	77	12	35.4	4,730
T road north, at Marthie J. Banks's mail box, No. 6	36	36	34.8	77	12	20.6	2,460

BOYKINS QUADRANGLE—Continued.

East through center of quadrangle along Seaboard Air Line Ry.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Boykins, opposite depot, 2 feet west of north rail	36	35	04.5	77	12	01.0	
Boykins, about 0.75 mile north of, center of railroad crossing	36	35	27.9	77	11	26.1	3,698
Milepost 53, north rail in front of	36	35	42.4	77	11	04.8	2,274
Milepost 52, north rail in front of	36	36	04.3	77	10	06.2	5,267
Railroad crossing, center of, north rail	36	36	21.3	77	09	35.6	3,025
Milepost 51, north rail in front of	36	36	34.3	77	09	13.2	2,252
Milepost 50, north rail in front of	36	37	04.7	77	08	20.6	5,276
Newsoms, 0.5 mile south of, center of railroad crossing, north rail	36	37	21.2	77	07	51.5	2,903
Newsoms, in front of milepost 49, north rail	36	37	31.7	77	07	25.5	2,371
Railroad crossing, center of, north rail	36	37	48.2	77	06	16.6	5,859
Milepost 47, north rail in front of	36	38	01.1	77	05	21.3	4,695
Gum post office, railroad crossing at, north rail	36	38	06.4	77	04	58.8	1,906
Milepost 46, north rail in front of	36	38	15.7	77	04	19.1	3,369
Milepost 45, north rail in front of	36	38	28.8	77	03	16.6	5,266
Handsom post office, railroad crossing at	36	38	29.4	77	03	11.2	445
From Newsoms northwest and southwest along highways to Boykins.							
Newsoms, 0.25 mile north of, road forks to west	36	37	34.0	77	07	36.3	
Road forks east	36	37	55.2	77	07	56.5	2,792
Small bridge, south end of	36	38	00.1	77	08	13.2	1,422
T road east, near A. J. Harris's mail box	36	38	33.9	77	08	41.8	4,135
Bridge, south end of	36	38	50.6	77	08	42.3	1,698
T road south	36	39	23.0	77	09	19.2	4,451
Prim. Trav. Sta. No. 14	36	34	59.6	77	12	11.9	
Boykins, first wooden bridge north of, on road to Courtland, north end of	36	35	16.6	77	12	02.1	1,898
Road forks, at top of hill	36	35	30.4	77	11	56.4	1,477
Right-angle turn in road near milepost 1	36	35	41.9	77	11	32.1	2,300
Milepost 2	36	36	27.9	77	11	55.4	5,014
Road forks, front of church	36	36	35.3	77	12	00.4	855
Milepost 3	36	37	00.2	77	11	28.0	3,643
Milepost 4	36	37	46.9	77	10	50.2	5,640
Milepost 5	36	38	30.5	77	10	20.1	5,051
Road north into woods, 75 feet east of, edge of road, near field, 12 feet west of large cedar tree	36	38	53.0	77	10	05.7	2,558
Road forks, at J. H. Pope's mail box, No. 18	36	39	00.7	77	09	57.3	1,035

Magnetic declination for south border of quadrangle, 4° 14′ W.; for west border of quadrangle, 4° 02′ W.; for center of quadrangle, 4° 16′ W.

CAMP ABRAHAM EUSTIS.

For positions see Yorktown quadrangle, pages 499 to 501.

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES.

From Mount Vernon flag pole northeast to Dunn triangulation station. (By School of Topography, U. S. Army, in 1918).

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Mount Vernon flag pole (U. S. Coast and Goedetic Survey)	38	42	27.17	77	05	10.62	
Mount Vernon electric station, about 1.5 miles northwest of, on top of north end of end wall of concrete culvert; chiseled square	38	43	57.17	77	05	33.93	9,295
Gum Springs, about 70 feet northeast of fork of Washington and Richmond Highway and Mount Vernon Boulevard, on south end of concrete watering trough; bronze tablet of U. S. Army	38	44	20.86	77	05	20.09	2,636
Gum Springs, 0.5 mile northeast of, at road forks, opposite Olivet Church	38	44	36.06	77	04	53.17	2,630
T road, 0.2 mile northeast of Olivet Church	38	44	35.51	77	04	37.88	1,212
Gate, west side of Alexandria road, near top of hill	38	44	54.77	77	03	47.00	4,480
Dunn triangulation station of the U. S. Coast and Geodetic Survey on farm of John T. Dunn, on a very high point about halfway between Alexandria and Mount Vernon, near center of small lot just south of farmhouse. It is best reached by wagon by the River Road from Alexandria. Station marks: Underground mark is a 3-inch terra-cotta pipe, set in cement, the top of which is about 15 inches below surface of ground; surface mark is a short piece of 4-inch terra-cotta pipe, set in cement, level with surface of ground	38	45	12.54	77	03	54.79	1,888

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From Mount Vernon flag pole to Gunston Hall.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Mount Vernon flag pole (U. S. Coast and Geodetic Survey station)	38	42	27.17	77	05	10.64	.....
Mount Vernon station, 0.1 mile northwest of, center of concrete bridge carrying electric railroad over highway	38	42	40.74	77	05	15.83	1,438
Mount Vernon station, 0.6 mile northwest of, crossroads, at northwest corner of concrete culvert; chiseled square	38	43	01.29	77	05	46.63	3,208
T road opposite west gate to Mount Vernon estate	38	42	46.94	77	05	48.67	1,460
T road south	38	42	57.85	77	06	33.82	3,747
Road forks, 0.3 mile south of Washington and Richmond Highway	38	43	05.75	77	07	06.22	2,690
Center of concrete bridge on Washington and Richmond Highway, 0.12 mile southwest to T road south	38	43	19.69	77	07	20.00	1,784
T road (lane) north	38	43	13.40	77	07	32.83	1,201
Crossroads, 0.25 mile southeast of, about 750 feet southwest of Woodlawn Mansion; bronze tablet	38	42	52.79	77	08	20.77	.....
T road north, about 300 feet west of, at Woodlawn Church	38	42	48.51	77	08	27.56	.....
Intersection of Washington and Richmond Highway and cement road leading into Camp Humphreys	38	42	40.52	77	08	37.10	1,107
Trestle 5, Camp A. A. Humphreys R. R., center of road	38	42	31.86	77	09	19.32	3,461
Accotink village, at T roads, east end of south wall of concrete culvert; bronze tablet of U. S. Army	38	42	30.93	77	09	33.79	1,151
Accotink Creek, east end of steel bridge over, on Washington and Richmond Highway	38	42	17.69	77	09	57.27	2,296
Road forks, one leads south to Pohick Bay	38	41	54.31	77	10	16.16	2,799
Fork of Washington and Richmond Highway and Lewis Chapel road, about 1 mile southeast of Pohick Church	38	42	03.11	77	10	46.03	2,532
Crossroads, 0.6 mile south of Pohick Church, near rifle range headquarters	38	42	05.61	77	11	49.40	5,033
Pohick Creek, south end of steel highway bridge over	38	41	53.34	77	12	05.89	1,804
Road fork, 0.5 mile southwest of Pohick Creek highway bridge	38	41	33.01	77	12	21.17	2,388
Lewis Chapel crossroads, about 50 feet southwest of, on concrete well platform; bronze tablet of U. S. Army	38	41	13.94	77	12	31.73	2,103
Road forks, 0.3 mile south of Lewis Chapel	38	40	58.02	77	12	32.11	1,611
Lebanon School, center of road opposite	38	40	41.65	77	12	09.93	2,415
T road northeast (private road)	38	40	20.21	77	11	34.84	3,528
Road forks, 1 mile southeast of Lebanon School	38	40	07.43	77	11	13.97	2,099
L in road	38	40	17.65	77	10	49.60	2,192
Road forks, left-hand road leads to Gunston Hall; hub at station 83	38	40	04.67	77	10	11.21	3,316
Road fork, 0.2 mile northwest of Gunston Hall, on north end of concrete culvert; chiseled square	38	39	57.89	77	09	47.90	1,971
Gunston Hall, square tower (U. S. Coast and Geodetic Survey position)	38	39	50.60	77	09	37.52	1,105

NOTE.—The tower on Gunston Hall has been removed; point tied to was the approximate center of house.

From point 1 mile southeast of Pohick Church via Washington and Richmond Highway and Richmond, Fredericksburg & Potomac R. R. to Accotink station.

Fork of Washington and Richmond Highway and Lewis Chapel road, about 1 mile southeast of Pohick Church	38	42	03.11	77	10	46.03	.....
Pohick Church, about 200 feet east of; 25 feet north of intersection of crossroads, in edge of field; concrete post, bronze tablet	38	42	33.02	77	11	36.06	.....
Road forks, 0.2 mile northwest of Pohick Church	38	42	36.25	77	11	50.36	1,183
Pohick Creek, east end of Washington and Richmond Highway steel bridge	38	42	12.96	77	12	51.23	5,369
Lorton station, about 600 feet north of, in east side of south abutment of Richmond, Fredericksburg & Potomac R. R. bridge over Washington and Richmond Highway; bronze tablet of U. S. Army	38	42	20.04	77	13	16.44	2,120
Pohick Creek, about 10 feet from south end of Richmond, Fredericksburg & Potomac R. R. bridge, on center line of southbound track	38	42	45.58	77	13	04.07	2,750
Pohick station, opposite, center of southbound track	38	43	09 85	77	12	35.96	3,314
Accotink Creek, center of Richmond, Fredericksburg & Potomac R. R. bridge, on southbound track	38	43	22.42	77	12	15.72	2,047
Center of northbound track, at road crossing	38	43	37.77	77	11	36.16	3,500
Richmond, Fredericksburg & Potomac R. R. northbound track, opposite tangent on Camp A. A. Humphreys R. R.	38	44	06.12	77	11	12.90	3,408
Accotink station, opposite operator's window, center of northbound track	38	44	16.95	77	11	09.81	1,120
Accotink station, about 300 feet north of, south end of Richmond, Fredericksburg & Potomac R. R. trestle; bronze tablet of U. S. Army	38	44	19.46	77	11	09.00	260

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From Pohick Church via highway to Potters Hill crossroads.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Pohick Church crossroads	38	42	32.72	77	11	36.10	.....
Pohick Church, 0.5 mile north of, in front of F. Neviti's residence, in root of cedar tree; nail	38	42	58.92	77	11	40.62	2,676
Accotink Creek, center of steel highway bridge	38	43	13.73	77	11	27.98	1,803
Center of Camp A. A. Humphreys R. R. crossing	38	43	30.49	77	10	57.60	2,947
Crossroads, at top of hill	38	43	49.58	77	10	29.74	2,962
T road, road to west leading to Accotink station	38	43	59.43	77	10	17.28	1,376
Center of highway over concrete culvert	38	44	17.31	77	10	03.66	2,109
Potters Hill crossroads, four corners, Hawkins Prim. Trav. Sta. (See Bull. 551, p. 327)	38	44	28.80	77	09	42.30	2,055

From Potters Hill crossroads to Accotink Village.

Potters Hill crossroads (described above)	38	44	28.80	77	09	42.30	.....
Road forks, 0.45 mile south of Potters Hill School	38	44	07.88	77	09	39.00	2,136
T road west	38	43	48.50	77	09	40.68	1,962
T road west	38	43	18.86	77	09	35.59	3,023
Trestle 4, on Camp A. A. Humphreys R. R., about 100 feet north of small creek	38	42	49.56	77	09	35.06	2,971
Accotink village, east end of south wall of concrete culvert; chiseled square	38	42	30.93	77	09	33.79	1,876

From Potters Hill crossroads via Woodlawn Road to Washington and Richmond highway.

Potters Hill crossroads (described above)	38	44	28.80	77	09	42.30	.....
Woodlawn road, at angle	38	43	56.72	77	09	21.53	3,657
Road forks	38	43	48.31	77	09	02.24	1,755
Center of wooden culvert across road to spring	38	43	30.49	77	08	50.03	2,052
Crossroads at church	38	43	12.60	77	08	40.47	1,967
T road north, about 300 feet west of Woodlawn Church, on Washington and Richmond Highway	38	42	48.51	77	08	27.56	.....

From Washington and Richmond Highway south along Belvoir Peninsula to old Fairfax Landing.

T road north, about 300 feet west of Woodlawn Church, on Washington and Richmond Highway	38	42	48.51	77	08	27.56	.....
Camp Humphreys, north end of base line of camp coordinate system	38	42	37.25	77	08	50.66	.....
Camp Humphreys, at north edge of east and west concrete road along north side of north section; iron bolt	38	41	37.01	77	08	19.51	6,577
Camp Humphreys, steel water tower, in concrete base of feed pipe; bronze tablet (Spur line. This point is unchecked.)	38	41	35.18	77	08	30.01	853
Camp Humphreys, at north edge of east and west concrete road along north side of north section; iron bolt	38	41	37.01	77	08	19.51	853
Camp Humphreys, north edge of east and west road along south side of H section; hub	38	41	09.49	77	08	05.34	3,005
Camp Humphreys, approximately on base line, in oak stump; nail	38	40	51.34	77	07	55.73	1,990
Camp Humphreys, south end of base line of camp coordinate system (station .0+00)	38	40	37.90	77	07	48.88	1,466
Intersection of road to Belvoir Dock and road to upper (new) dock	38	40	53.07	77	07	46.10	1,549
Forks of road to Belvoir Dock and old road to old watch house, at Fairfax Landing	38	41	03.30	77	07	49.57	1,069
White house, the farther south of two, chimney of (U. S. C. & G. S. position)	38	41	00.86	77	07	28.34	1,703

From Accotink station along highways southeast to Accotink village.

Richmond, Fredericksburg & Potomac Ry. track, 1,120 feet south of Accotink station, opposite tangent on Camp A. A. Humphreys R. R	38	44	06.12	77	11	12.90	.....
Crossroads, 0.2 mile southeast of Accotink station	38	44	04.69	77	11	03.58	750
Road forks	38	44	00.10	77	10	30.89	2,630
Top of hill, west side of road, in stump; nail, painted "P. T. Pt. No. 1"	38	43	35.22	77	10	29.63	2,515
Camp A. A. Humphreys R. R., 100 feet southeast of crossing, in front of W. T. Jones's residence, in root of oak tree, painted "U. S. A. 71.3 B. M.;" copper nail	38	43	12.30	77	10	13.59	2,641
Center of road, over concrete culvert	38	42	46.57	77	09	36.94	3,896
Accotink village, at T roads, east end of south wall of concrete culvert; chiseled square	38	42	30.93	77	09	33.79	1,599

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From U. S. Geological Survey point Hawkins near Accotink station, on Southern Ry., to junction of telegraph and gravel roads. (By School of Topography, U. S. Army, in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Grade crossing	38	44	18.08	77	11	09.49	.....
Second-class road crossing	38	45	16.83	77	10	42.07	6,330
Crossing of culvert and railroad	38	46	07.64	77	09	48.28	6,599
Franconia station, second-class road crossing	38	46	56.9	77	09	23.07	5,464
T road at church	38	46	55.88	77	08	46.62	2,888
Concrete culvert, center line	38	47	02.75	77	07	55.63	4,097
Prim. Trav. Sta. No. 3, in concrete culvert, at side of road	38	47	10.63	77	07	20.30	2,910
Intersection of T road and telegraph road	38	46	28.51	77	06	41.76	5,240
Concrete culvert, bench mark 970	38	46	11.49	77	07	06.97	2,641
Prim. Trav. Sta. No. 5, in concrete culvert, at side of road, near intersection of telegraph and gravel roads; chiseled square	38	46	02.35	77	07	17.25	1,225

From Potters Hill crossroads, U. S. Geological Survey point Hawkins, to junction of telegraph and gravel roads.

Four corners, 100 feet southeast to schoolhouse, 220 feet west to house (U. S. G. S. point Bull. 551, p. 327)	38	44	28.8	77	09	42.3	.....
Road to right to gravel pit	38	44	33.63	77	09	27.77	1,250
Concrete bridge, center line	38	44	38.37	77	09	02.67	2,047
Concrete bridge	38	44	53.67	77	08	37.40	2,529
Concrete culvert, center of, in front of tenant house belonging to Hayfield mansion	38	45	03.48	77	08	27.10	1,285
Road left to gravel pit	38	45	13.72	77	08	18.95	1,221
Prim. Trav. Sta. No. 4, nail in concrete culvert, 750 feet north of Hayfield mansion	38	45	23.34	77	08	14.34	1,040
Right-hand side of road, 693.5 feet from concrete culvert; nail in root of cedar tree	38	45	29.13	77	08	09.64	693
Wood culvert	38	45	42.68	77	07	53.58	1,871

From intersection of telegraph and gravel roads (Prim. Trav. Sta. No. 5) to Gum Springs.

Prim. Trav. Sta. No. 6, 6 feet from oak tree which is bench mark 48.9	38	45	41.48	77	06	23.94	4,718
Wooden bridge	38	45	37.41	77	05	46.08	3,028
Prim. Trav. Sta. No. 7, chiseled square on concrete culvert, at T road west, 1.2 miles from Gum Springs Church	38	45	33.36	77	05	08.62	2,993
Concrete culvert	38	45	04.76	77	05	04.70	2,907
Nail in oak stump, on left-hand side of road, between telegraph posts 188 and 189, 30 feet from 189	38	44	40.62	77	04	50.80	2,677
Gum Springs, at junction of concrete road and Richmond and Washington Highway, near colored church; nail	38	44	36.47	77	04	52.95	448
Gum Springs, Prim. Trav. Sta. No. 2, 70 feet northeast of road forks	38	44	20.86	77	05	20.09	2,672

No magnetic declination.

From Mount Vernon to Hunter via Washington-Virginia Ry. (electric) and from Hunter to Fort Hunt via highway. (By H. S. Senseney in 1920.)

Mount Vernon flag pole, U. S. Coast and Geodetic Survey triangulation station	38	42	27.17	77	05	10.64	.....
Second-class road crossing, 2 feet west of telephone pole, at northwest corner of crossing; copper nail in hub, marked "P. T. 1 S."	38	42	55.54	77	05	06.40	2,890
Miller, center of track, in front of station, copper nail in tie, marked "P. T. 2 S."	38	43	02.59	77	04	40.73	2,155
Riverside, center of track in front of station; copper nail in tie, marked "P. T. 3 S."	38	43	08.89	77	04	26.87	1,269
Second-class road crossing, center of track; copper nail, marked "P. T. 4 S."	38	43	12.31	77	04	19.33	691
Hunter, center of road crossing; copper nail, marked "P. T. 5 S."	38	43	22.02	77	03	53.38	2,279
T road west, in southwest corner, in root of cedar tree; copper nail, marked "P. T. 36 S."	38	43	19.11	77	03	39.81	1,115
Fort Hunt, on north side of road, at entrance, southwest corner of base of gate post; chiseled square, marked "P. T. 37 S."	38	43	07.30	77	03	27.79	1,529
Fort Hunt, flag pole, U. S. Coast and Geodetic Survey triangulation station	38	42	56.46	77	03	06.59	2,006

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From Hunter to New Alexandria via Washington-Virginia Ry. (electric).

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Hunter, "Prim. Trav. Sta. 5 S." (previously described)	38	43	22.02	77	03	53.38	
North Mount Vernon, 98 feet west of road crossing, 15 feet south of center of track, 17 feet north of center of road; copper nail in hub, marked "P. T. 6 S." (Prim. Trav. Sta. No. 1 to be set here)	38	43	29.71	77	03	35.63	1,608
Grassymead, in front of station, center of track, marked "P. T. 7 S."	38	43	39.10	77	03	19.05	1,621
Snowdons, 30 feet south of road crossing, in east end of tie; copper nail, marked "P. T. 8 S."	38	43	55.94	77	02	53.35	2,656
Herbert Springs, center of track, at road crossing; copper nail, marked "P. T. 9 S."	38	44	07.04	77	02	48.77	1,180
Arcturus, center of track, in front of station; copper nail, marked "P. T. 10 S."	38	44	14.41	77	02	48.98	747
Wellington, center of track, at road crossing; copper nail, marked "P. T. 11 S."	38	44	25.68	77	02	51.54	1,158
Wellington Villa, center of track, at road crossing; copper nail marked "P. T. 12 S."	38	44	48.20	77	02	56.69	2,315
Aled, center of track, in front of station; copper nail, marked "P. T. 13 S."	38	44	55.41	77	02	58.33	740
Warwick, 34 feet south of southeast corner of station, 23 feet west of west rail; copper nail in hub, marked "P. T. 14 S." (Prim. Trav. Sta. No. 2 to be set here)	38	45	06.64	77	03	01.20	1,160
Dyke, center of track, in front of station; copper nail, marked "P. T. 24 S."	38	45	33.44	77	02	57.80	2,724
New Alexandria, at south end of tangent south of, center of track, between trolley poles; copper nail, marked "P. T. 25 S."	38	46	15.00	77	03	28.20	4,846
New Alexandria, 40 feet south and 36 feet east of road crossing, 6 feet west of poplar tree; copper nail in hub, marked "P. T. 26 S." (Prim. Trav. Sta. No. 3 to be set here)	38	46	49.50	77	03	23.48	3,510
West edge of road, 34 feet south of concrete culvert; copper nail, marked "P. T. 27 S."	38	46	47.61	77	03	47.41	1,905
Road forks, on south edge of concrete road, 31 feet east of telephone pole; marked "P. T. 23 S."	38	47	28.56	77	03	38.32	4,204

From Gum Springs to New Alexandria via highway.

Gum Springs, 70 feet northeast of fork of Washington and Richmond Highway and Mount Vernon Boulevard, south end of watering trough; chiseled square	38	44	20.86	77	05	20.09	
Gum Springs Church, 35 feet northeast of, in root of oak tree; copper nail, marked "P. T. 18 S."	38	44	37.50	77	04	52.58	2,753
Front of red barn, west side of road, in root of big oak tree; copper nail, marked "P. T. 19 S."	38	45	15.50	77	05	11.60	4,128
T road west, east end of culvert, at northwest corner; bronze tablet, stamped "P. T. 23 S."	38	45	33.22	77	05	08.60	1,808
East edge of concrete road, at two mail boxes; chiseled square, marked "P. T. 15 S."	38	45	47.22	77	05	04.09	1,463
Crossroads, in southwest corner, 1 foot east of telephone pole, in hub; copper nail, marked "P. T. 16 S."	38	45	57.08	77	05	03.22	998
Telephone pole 115, west edge of concrete road; chiseled square, marked "P. T. 17 S."	38	46	20.84	77	04	53.68	2,520
Crossroads, at southwest corner, at base of telephone pole, in hub; copper nail, marked "P. T. 21 S."	38	46	52.66	77	04	45.42	3,284
Telephone pole 64, 24 feet south of, 2 feet west of west edge of concrete road; copper nail, marked "P. T. 22 S."	38	47	15.60	77	04	01.80	4,161
Road fork, 31 feet east of telephone pole, on south edge of concrete road; chiseled cross, marked "P. T. 23 S."	38	47	28.56	77	03	38.32	2,275

From Gum Springs along highway to Hunter.

Prim. Trav. Sta. 18	38	44	37.50	77	04	52.58	
T road south, at southeast corner, 6 feet west of corner fence post, in hub; copper nail, marked "P. T. 30 S."	38	44	35.43	77	04	37.74	1,194
Bend in road, on east side of road, in root of tree; copper nail, marked "P. T. 31 S."	38	44	15.74	77	04	23.70	2,282
T road south, in southwest corner of, in root of small oak tree; copper nail, marked "P. T. 32 S."	38	44	08.90	77	03	58.68	2,100
Lane west to house, on east side of road, in root of pine tree; copper nail, marked "P. T. 33 S."	38	43	59.71	77	04	00.22	939
T road west, in southwest corner, in root of cedar tree; copper nail, marked "P. T. 34 S."	38	43	35.38	77	04	06.09	2,508
Road forks, on west side of road, in root of pine tree; copper nail, marked "P. T. 35 S."	38	43	25.26	77	04	08.25	1,040
Prim. Trav. Sta. 5	38	43	22.02	77	03	53.38	1,223

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

Southeast along highway to Warwick.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. 16	38	45	57.08	77	05	03.22	.....
West side of road, 120 feet south of red gate, in root of oak tree; copper nail, marked "P. T. 38 S."	38	45	38.01	77	04	26.37	3,498
South side of road, top of hill, in root of locust tree; copper nail, marked "P. T. 39 S."	38	45	14.61	77	03	57.35	3,299
North side of road, 80 feet west of iron gate, in root of oak tree; copper nail, marked "P. T. 40 S."	38	44	59.18	77	03	42.01	1,977
Road forks, on concrete culvert south of; chiseled cross, marked "P. T. 41 S."	38	45	10.40	77	03	27.34	1,624
Prim. Trav. Sta. 14, Warwick	38	45	06.64	77	03	01.20	2,105

From Pohick station north along highway to Barker's crossroads. (By School of Topography, U. S. Army, in 1918.)

Intersection of abandoned road and main road	38	43	25.40	77	12	34.95	.....
Prim. Trav. Sta. No. 1, nail on east side of road, at T road to left; in root of 24-inch jack pine tree	38	43	41.89	77	12	35.44	1,668
T road west, in center of road	38	44	18.50	77	12	41.22	3,733
Intersection with road west	38	44	27.33	77	12	43.40	909
Prim. Trav. Sta. No. 2, in curve of road, in stump 1 foot high; nail	38	44	54.24	77	12	44.87	2,725
Barker's crossroads, near Davis's store, intersection of roads; Prim. Trav. Sta. No. 3	38	45	34.08	77	13	04.80	4,328
Pohick Creek, middle of road crossing in	38	45	25.84	77	13	36.12	2,618
T road to farmhouse	38	45	23.86	77	13	48.23	980
Road intersection, T road to left	38	45	24.69	77	14	00.53	976

Southeast along highway from road intersection at Gambol's store 1 mile south of Pohick School to Pohick station.

Second-class private road to left	38	45	11.41	77	13	55.47	1,400
Middle Run, center	38	45	01.29	77	14	02.40	1,162
Prim. Trav. Sta. No. 1, 50 feet east of intersection of main road and second-class road to Pohick School	38	44	36.79	77	14	04.13	2,482
Small culvert	38	44	28.74	77	13	56.16	1,030
Private road to left	38	44	25.23	77	13	52.60	453
Second-class abandoned road to south	38	44	14.77	77	13	43.26	1,292
Prim. Trav. Sta. No. 2, 8 feet east of center line of road, 7 feet west of blazed 10-inch black-oak tree: hub painted "P. T, No. 2"	38	44	09.90	77	13	33.27	933
Prim. Trav. Sta. No. 3, west side of road, chiseled cross on concrete post, "DCR 1914," painted "P. T. N. 3"	38	43	54.79	77	13	18.29	1,937
Intersection of second-class road to left	38	43	50.18	77	13	15.99	500
Second-class road to right	38	43	24.81	77	13	04.70	2,719
Intersection of pulp-wood road to left, east side of road, in root of 14-inch white-oak tree; nail	38	43	18.51	77	12	54.22	1,050
Prim. Trav. Sta. No. 4, iron bridge over Pohick Creek, on north wing wall; chiseled cross painted "P. T. No. 4"	38	43	12.03	77	12	43.14	1,096
Pohick station, road crossing, at end of bridge	38	43	12.31	77	12	34.65	673

Along highways from Pohick Church southeast to rifle range. (By School of Topography, U. S. Army, in 1918.)

Prim. Trav. Sta. No. 1, nail in saddle of twin willow trees, 50 feet east of barn, painted "P. T. No. 1"	38	42	03.06	77	11	47.51	.....
Nail in stake, 1 foot from trunk of 10-inch walnut tree, in front of Mrs. Grace Merchant's house, near rifle range	38	41	21.48	77	11	36.23	4,298
Prim. Trav. Sta. No. 2, stake 1 foot from trunk of 15-inch cedar tree, 1,800 feet west of brick house, on S. Shephard's farm	38	41	14.90	77	10	39.11	4,579
Prim. Trav. Sta. No. 3, nail in root of 9-inch cedar tree, on left side of road, 1,000 feet northwest of S. Shepard's house, painted "P. T. No. 3"	38	41	31.33	77	10	13.70	2,614

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From Shiloh Church via Sycamore Point to Sandy Point.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Wood culvert	38	39	42.12	77	09	53.59	2,674
Gunston Hall, half a mile south of; concrete post east side of road forks, at angle in fence line; bronze tablet	38	39	28.97	77	09	42.64	.....
Nail in root of 12-inch blazed oak tree, on west side of road, 100 feet north of road	38	39	08.95	77	09	13.37	.....
Hub at northwest corner of crossroads	38	38	47.26	77	08	55.77	2,602
Prim. Trav. Sta. No. 2, on stump of 6-inch maple tree, 10 feet north of center line of road, 5 feet south of blazed maple tree, marked "Sta. No. 20"	38	38	43.99	77	09	06.92	944
Nail in 3-inch pine stump, 8 feet north of center of roads	38	38	45.00	77	09	27.45	1,630
Root of 30-inch oak tree, 4 feet south of road, blazed and marked "Sta. 32"	38	38	41.22	77	09	31.13	480
Prim. Trav. Sta. No. 3, nail in root of 24-inch pine tree, north side of road, blazed and marked "Sta. 38"	38	38	36.00	77	09	42.38	1,040
Prim. Trav. Sta. No. 4, nail in root of tree, near small forks of road	38	38	29.37	77	10	03.71	1,820
Prim. Trav. Sta. No. 5, painted, nail in root of 10-inch pine tree, on south side of road	38	38	07.52	77	10	23.47	2,711
Prim. Trav. Sta. No. 6, nail in hub at intersection of Sycamore and Sandy Point roads	38	38	40.67	77	10	25.00	2,719
Sycamore Point, U. S. Coast & Geodetic Survey station, 3-inch vitrified pipe set in cement, 5 feet from 12-inch pine tree and 4 feet from edge of 20-foot cliff, about 100 feet east of small ravine	38	37	27.68	77	10	23.86	1,316
Near intersection of Sycamore Point and Sandy Point roads.							
Nail in root of red-oak tree, on west side of road, at edge of woods, 600 feet easterly on road is bridge	38	37	45.01	77	11	11.58	3,722
Prim. Trav. Sta. No. 7, nail in root of 20-inch oak stump, 20 feet high on south side of road	38	37	56.89	77	11	29.12	1,836
Bridge	38	37	59.37	77	11	43.51	1,167
Hub on north side of road, 25 feet east of wooden culvert	38	37	55.40	77	12	06.09	1,836
Sandy Point, Occoquan Bay, white flagpole (the stump only remains); U. S. Coast & Geodetic Survey point	38	37	57.11	77	12	46.84	3,240
From Primary Traverse Station 20 S to Primary Traverse Station 29 S. (By H. S. Senseney in 1920.)							
Prim. Trav. Sta. No. 20 S (previously described)	38	45	33.22	77	05	08.60	.....
Crossroads, 19 feet west of, on south side of east and west road; copper nail in hub marked "P. T. 28 S"	38	45	37.18	77	05	45.35	2,938
Small bridge, 100 feet south of, in south side of road, 7 feet east of tree; copper nail in hub marked "P. T. 29 S"	38	45	06.80	77	06	04.55	3,430
From Primary Traverse Station 1 B to Primary Traverse Station 29 S.							
T road north, 1 foot south of concrete road; copper nail in hub, marked "P. T. P. No. 1 B"	38	44	07.51	77	05	46.12	.....
Gate post, 2 feet east of, on north side of road; copper nail in hub, marked "P. T. 42 S"	38	44	16.11	77	05	53.54	1,050
East and west wire fence, 13 feet north of, 14 feet east of end of north and south wire fence, on east edge of woods; copper nail in stump marked "P. T. 43 S"	38	44	48.16	77	05	53.96	3,242
Prim. Trav. Sta. 29 S (previously described)	38	45	06.80	77	06	04.55	2,064
From Gum Springs to old road forks near Doque Creek. (By D. S. Birkett in 1919.)							
Gum Springs (previously described)	38	44	20.86	77	05	20.09	.....
"P. T. P. 1 B" (previously described)	38	44	07.51	77	05	46.12	2,465
Road forks, 12 feet west of large oak tree, 25 feet north of concrete road; copper nail in hub marked "P. T. P. 2 B"	38	43	45.83	77	06	27.28	3,930
T road northwest, 25 feet west of, 2 feet north of concrete road, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 12 B"	38	43	37.29	77	06	44.43	1,610
T road west, in Y; copper nail in hub, marked "P. T. 4 B"	38	43	55.05	77	06	49.46	1,840
T road northwest, at intersection; copper nail in hub, marked "P. T. 5 B"	38	43	45.86	77	07	25.99	3,040
East and west road, 25 feet north of gate, 7 feet east of road; copper nail in stump, marked "P. T. 6 B"	38	44	14.85	77	07	39.05	3,110
Road forks, in Y; copper nail in hub, marked "P. T. 7 B"	38	44	22.70	77	07	43.53	868

Magnetic declination, 5° 35′ W.

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From old road forks near Dogue Creek to Potter's Hill crossroads. (By D. S. Birkett in 1920.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks, at Dogue Creek, 8 feet north of road, in root of 12-inch gum tree; copper nail, marked "P. T. 11 B"	38	44	21.12	77	07	57.46	1,114
Prim. Trav. Sta. No. 11 B, 3 feet west of, on same root; thin copper nail, tree painted "U. S. A. 26.1 B. M.," elevation, 25.94 feet.							
Road forks, 100 feet south of bridge, in Y; copper nail in hub, "P. T. 12 B," elevation, 59.54 feet	38	44	45.78	77	08	24.40	3,284
Hayfield Farm, at red gate, 12 feet south of Telegraph Road; bronze tablet in concrete post	38	45	06.73	77	08	23.75	2,118
Crossroads, 15 feet southwest of center of; copper nail in hub, marked "P. T. 14 B"	38	45	16.96	77	08	38.49	1,558
T road west, 50 feet north of, 8 feet east of road; copper nail in root of 12-inch pine tree, marked "P. T. 15 B"	38	45	48.73	77	09	07.91	3,970
Laurel Grove School, one-third of a mile south of, at junction with Potter's Hill and Franconia Road, 6 feet north of road; copper nail in cedar stump, marked "P. T. 16 B"	38	45	57.95	77	09	21.18	1,404
Road forks, in Y; copper nail in hub, marked "P. T. 17 B"	38	45	30.09	77	09	41.49	3,245
White house, opposite, on west edge of road; copper nail in hub, marked "P. T. 18 B"	38	45	03.15	77	10	00.86	3,128
T road west, at base of mail box; copper nail in root of 10-inch pine stump, marked "P. T. 19 B"	38	44	39.82	77	09	59.41	2,361
Potters Hill crossroads, 25 feet west of center of road, in top of concrete abutment; bronze tablet	38	44	28.81	77	09	42.61	1,735
Tie point, "Hawkins Four Corners" (See Bull. 551, p. 327)	38	44	28.80	77	09	42.30	25

Magnetic declination, 4° 20′ W.

From point near Laurel Grove School to point 2 miles southwest of Franconia.

"P. T. 16 B" (previously described)	38	45	57.95	77	09	21.18	.....
Laurel Grove crossroads, 20 feet south of; copper nail in top of twin pine stump, marked "P. T. 21 B"	38	46	13.30	77	09	12.77	1,688
T road east, at east edge of main road; copper nail in hub, marked "P. T. 22 B"	38	46	33.94	77	08	57.12	2,427
Olivet Chapel, T road at, in root of oak tree used as sign board; nail, marked "P. T. 23 B"	38	46	55.80	77	08	46.83	2,358
Franconia station, 0.25 mile south of; center of concrete bridge over Southern Ry. track; bronze tablet stamped "Prim. Trav. Sta. No. 3 B"	38	46	46.38	77	09	24.95	3,180
Road forks north, opposite white house, at north edge of road; copper nail in hub, marked "P. T. 25 B"	38	46	45.79	77	09	37.63	1,003
T road north, 20 feet east of, at base of mail box; copper nail in hub, marked "P. T. 26 B"	38	46	41.18	77	10	05.68	2,270
Road forks northwest, 6 feet east of wood culvert; nail in hub, marked "P. T. 27 B"	38	46	42.01	77	10	43.47	2,993
Dodson place, in front of, 25 feet east of road, in top of pine stump; nail, marked "P. T. 28 B"	38	46	18.41	77	10	52.52	2,494
Road forks, tie point, Hawkins (See Bull. 551, p. 327)	38	46	04.50	77	11	04.60	1,703

Magnetic declination, 4° 57′ W.

Three positions not tied in.

Road forks, in Y, nail in hub marked "P. T. 29 B"	38	46	04.19	77	11	04.65	32
Road forks	38	45	24.50	77	11	01.15	4,025
Second-class road forks east, east side of road; nail in hub, marked "P. T. 30 B"	38	45	24.27	77	11	01.14	23

From crossroads at Pohick School southeast to Lorton. (By School of Topography, U. S. Army, in 1918. By D. S. Birkett in 1920.)

Pohick School crossroads, Sydenstricker Chapel; concrete post set 31 feet south	38	45	21.85	77	14	19.58	1,537
Middle Run, center, 50 feet west of road crossing	38	45	10.27	77	14	40.32	2,018
Private road	38	44	59.23	77	14	41.94	1,122
Intersection of roads to Lorton and Pohick stations, 1 mile southwest of Pohick School crossroads	38	44	43.64	77	15	02.00	2,239
T road to right, private road	38	44	13.18	77	15	09.46	3,139
Three corners	38	44	10.94	77	15	10.09	233
Small wooden culvert	38	43	45.18	77	15	01.17	2,700
Prim. Trav. Sta. No. 5, intersection of Occoquan and Lorton roads=Prim. Trav. Sta. 47 B. Silver Brook School 0.7 mile north of, at junction of Silver Brook and Hose roads, in southeast angle of crossroads; concrete post, marked "P. T. S. No. 16 B"	38	43	41.12	77	15	03.25	445

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From crossroads at Pohick School southeast to Lorton—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Small concrete culvert	38	43	36.17	77	14	45.28	1,508
Second-class roads; T road west	38	43	14.63	77	14	22.04	2,853
Second-class road to right	38	43	09.38	77	14	16.60	680
Private road to left	38	42	56.19	77	14	02.22	1,755
District of Columbia Reformatory Farm, entrance to, 1.1 miles northwest of Lorton; nail in root of twin oak, painted Prim. Trav. Sta. No. —	38	42	53.22	77	13	59.18	387
Prim. Trav. Sta. No. 54 B, private T road northeast, on base of telephone pole; hub and copper nail	38	42	30.96	77	13	41.58	2,650
Lorton station, 600 feet north of, center of northbound track, Richmond, Fredericksburg & Potomac R. R. bridge over Washington and Richmond Highway; Prim. Trav. Sta. No. 7.	38	42	20.17	77	13	16.50	2,268

Magnetic declination, 5° 32′ W.

From Lorton via Occoquan Workhouse and Silver Brook School to point on Rolling Road 2 miles north of Pohick School.

Lorton, Prim. Trav. Sta. No. 38 B, opposite Lorton Telephone Co.'s office, at base of telephone pole; hub and copper nail	38	42	16.27	77	13	40.56	.....
Prim. Trav. Sta. No. 39 B, bridge over Mill Creek, in floor near north rail; copper nail	38	42	19.28	77	14	12.86	2,577
Road forks, opposite signboard marked "Government Reservation," in concrete post; elevation 234.371 feet, bronze tablet stamped "Prim. Trav. Sta. No. 20 B"	38	42	10.39	77	14	42.59	2,524
Prim. Trav. Sta. No. 41 B, west side of road forks, 800 feet northwest of District of Columbia Reformatory stables; chiseled square in concrete drain cover	38	42	01.76	77	15	15.08	2,718
Prim. Trav. Sta. No. 42 B, T road, 1,000 feet northwest of District of Columbia farm watch tower, at base of signboard marked "To Washington," on top of cement curb; chiseled square, painted "P. T. 42 B"	38	41	57.78	77	15	23.44	775
Prim. Trav. Sta. No. 43 B, road forks, about 0.4 mile north of District of Columbia Reformatory buildings, at foot of 10-inch oak tree in Y, painted "P. T. 43 B"	38	42	24.22	77	15	31.98	2,759
District of Columbia, old Reformatory boundary post at road forks	38	42	29.23	77	15	23.91	817
Prim. Trav. Sta. No. 45 B, 25 feet north of Giles Run, west edge of road, in top of 10-inch oak stump; copper nail	38	42	56.17	77	15	10.48	2,925
Prim. Trav. Sta. No. 46 B, road forks, about 600 feet southwest of white house	38	43	27.19	77	15	11.34	3,139
Prim. Trav. Sta. No. 47 B, old point Prim. Trav. Sta. No. 5 (previously described)	38	43	41.12	77	15	03.25	1,546
Prim. Trav. Sta. No. 48 B, T road, 1,100 feet southeast of Silver Brook Chapel, at fence corner; copper nail in hub	38	43	23.09	77	14	28.17	3,326
Prim. Trav. Sta. No. 49 B, on root of 12-inch oak tree, 0.3 mile south of South Run, on north slope of hill, 30 feet east of fence	38	43	44.50	77	14	02.15	2,990
Prim. Trav. Sta. No. 50 B, at road intersection, south edge of third-class road, in root of twin oak tree; copper nail	38	44	14.04	77	13	43.66	3,330
Prim. Trav. Sta. No. 51 B, opposite gate at T road north, south side of road, in top of 4-inch oak stump; copper nail	38	44	25.31	77	13	52.65	1,345
Prim. Trav. Sta. No. 52 B, south edge of road, 100 feet east of Pohick Creek, south edge of field; copper nail in top of 3-inch oak stump	38	44	32.10	77	13	25.65	2,246
Prim. Trav. Sta. No. 53 B, hub, east side of Rolling Road, opposite T road, on base of 12-inch stump 7 feet high; copper nail	38	44	32.10	77	12	43.23	3,361
Old Prim. Trav. Sta. No. 2, top of 8-inch pine stump (previously described)	38	44	54.24	77	12	44.87	2,244

Magnetic declination, 5° 30′ W.

Continuation of line from Gum Springs to junction of gravel and telegraph roads.

Prim. Trav. Sta. No. 8 B, opposite white house, 3 feet northwest of fence line; copper nail in hub	38	44	36.48	77	07	29.73	1,772
Prim. Trav. Sta. No. 9 B, 150 feet south of brook, 5 feet east of road; copper nail in hub. Elevation 30.18 feet	38	44	54.52	77	07	14.25	2,198
Prim. Trav. Sta. No. 10 B (old Prim. Trav. No. 1), nail in root of sweet-gum tree. Elevation 35.85 feet	38	45	06.72	77	07	03.83	1,484
Prim. Trav. Sta. No. 62 B (t. b. m. 43 .9), 0.6 mile southeast of forks of gravel and telegraph roads; copper nail in root of tree	38	45	41.10	77	07	01.50	3,479
Junction of telegraph and gravel roads (previously described)	38	45	02.35	77	07	17.25	2,482

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

Along highway from New Alexandria northwest to Fairfax court house. (By H. S. Senseney in 1920.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. No. 23 S (previously described)	38	47	28.56	77	03	38.32	
Prim. Trav. Sta. No. 44 S, south side of road, in top of post at mail box; copper nail	38	47	38.69	77	04	15.40	3,112
Prim. Trav. Sta. No. 45 S, in rear of Pullman's store at road forks, 2½ feet east of northeast corner of small brick building; copper nail in hub	38	47	54.45	77	04	48.39	3,060
Prim. Trav. Sta. No. 46 S, in west end of trestle, 2 feet north of north rail of most southerly track, 21 feet west of center of road; copper nail	38	48	16.34	77	04	27.80	2,750
Prim. Trav. Sta. No. 47 S, at road crossing, just south of south rail of south trestle	38	48	19.14	77	05	16.66	3,880
Prim. Trav. Sta. No. 48 S, north side of road, at T road south; copper nail	38	48	29.82	77	05	15.06	1,086
Alexandria, about 1 mile west of, at northeast corner of T road north, at H. W. Stanton's store, on concrete culvert, in chiseled cross; tablet stamped "Prim. Trav. Sta. 4 S"	38	48	30.77	77	05	19.70	380
Prim. Trav. Sta. No. 50 S, at southeast corner of T road south, in top of stump; copper nail	38	48	36.77	77	05	52.60	2,675
Prim. Trav. Sta. No. 51 S, north side of road, 12 feet west of lane north through gate; copper nail in hub	38	48	44.07	77	06	28.04	2,902
Prim. Trav. Sta. No. 52 S, north side of road, 12 feet west of lane through gate, in top of stump; copper nail	38	48	42.59	77	07	01.94	2,687
Prim. Trav. Sta. No. 53 S, on west side of lane north, 5 feet north of road gate, in root of tree; copper nail	38	48	46.38	77	07	30.95	2,329
Lincolnia, Prim. Trav. Sta. No. 54 S, at northeast corner of crossroads, 2.6 feet south of tree; copper nail in hub (post No. 5 to be set here)	38	48	56.26	77	08	13.17	3,489
Prim. Trav. Sta. No. 55 S, at northeast corner of T road north, in root of tree	38	49	06.24	77	08	36.50	2,105
Prim. Trav. Sta. No. 56 S, on south side of road, 6 feet north of telephone pole 244, in stump; copper nail	38	49	12.33	77	09	11.45	2,834
Lincolnia, 1½ miles northwest of, 20 feet north and 28 feet east of crossroads, Prim. Trav. Sta. No. 57 S; copper nail in hub (post No. 6 to be set here)	38	49	21.58	77	09	48.72	3,097
Prim. Trav. Sta. No. 58 S, south side of road, at road forks, 3½ feet south of fence, in top of stump; copper nail	38	49	30.71	77	10	27.83	3,232
Prim. Trav. Sta. No. 59 S, north side of road, 40 feet east of G. H. Nash's mail box, in stump; copper nail	38	49	42.35	77	11	06.40	3,273
Annandale, Prim. Trav. Sta. No. 60 S, 150 feet west of McDaniels's store, on south side of road, 30 feet west of road forks; copper nail in hub (post No. 7 to be set here)	38	49	49.94	77	11	49.88	3,527
Prim. Trav. Sta. No. 61 S, 4 feet west of telephone pole 369, in top of stump; copper nail	38	49	56.25	77	12	26.84	2,995
Prim. Trav. Sta. No. 62 S, south side of road, 20 feet east of T road north, 3 feet north of fence post; copper nail in hub	38	50	04.08	77	13	05.54	3,163
Prim. Trav. Sta. No. 63 S, cross cut in south end of east abutment of bridge	38	50	08.63	77	13	39.46	2,725
Annandale, about 2 miles west of, on south side of road, 8 feet east of corner fence, Prim. Trav. Sta. No. 64 S (post No. 8 to be set here)	38	50	12.48	77	14	20.77	3,293
Ilda, Prim. Trav. Sta. No. 65 S, in southwest corner of road forks, in root of oak tree; copper nail	38	50	18.17	77	15	06.38	3,656
Prim. Trav. Sta. No. 66 S, at base of P. R. Labouisse's mail box, in hub; copper nail	38	50	23.16	77	15	42.35	2,891
Fairfax courthouse, about 2 miles east of, at northwest corner of T road north, Prim. Trav. Sta. No. 67 S; copper nail in hub (post No. 9 to be set here)	38	50	29.05	77	16	25.30	3,450
Prim. Trav. Sta. No. 68 S, north side of road, 60 feet west of house, in stump; copper nail	38	50	34.33	77	17	06.09	3,273
Prim. Trav. Sta. No 69 S, north side of road, 60 feet west of T road south, on culvert; chiseled cross	38	50	35.88	77	17	18.82	1,019
Prim. Trav. Sta. No. 70 S, on south side of road, at top of hill, 3 feet west of white gatepost, in hub; copper nail	38	50	39.92	77	17	52.37	2,687

From Fairfax south along highways to Occoquan.

Fairfax, on north side of courthouse, in west end of top of step; bronze tablet stamped 447 (this tablet will also be stamped "Prim. Trav. Sta. No. 10 S 1920")	38	50	46.60	77	18	26.12	2,755
Prim. Trav. Sta. No. 71 S, west side of road, at second-class road west, in stump; copper nail	38	50	17.18	77	18	44.44	3,310
Prim. Trav. Sta. No. 72 S, on west side of road, 8 feet north of bar gate, in hub; copper nail	38	49	53.02	77	18	56.16	2,614

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From Fairfax south along highways to Occoquan—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Fairfax courthouse, about 2 miles south of, 25 feet south and 20 feet west of cross roads, Prim. Trav. Sta. No. 73 S; copper nail in hub (post No. 11 S will be set here)	38	49	39.22	77	19	01.13	1,452
Prim. Trav. Sta. No. 74 S, on east side of road, 20 feet north of fence line, in hub; copper nail	38	49	09.96	77	19	12.37	3,091
Prim. Trav. Sta. No. 75 S, on east side of road, 30 feet south of road forks, in stump; copper nail	38	48	45.50	77	19	28.09	2,771
Prim. Trav. Sta. No. 76 S, on west side of road, 20 feet north of driveway to yellow house on hill, in hub; copper nail	38	48	22.19	77	19	37.52	2,474
Fairfax station, Prim. Trav. Sta. No. 77 S, 12 feet south and 15 feet east of south end of highway bridge over Southern Ry.; copper nail in hub (post No. 12 S to be set here)	38	47	59.91	77	19	41.06	2,272
Prim. Trav. Sta. No. 78 S, on west side of road, at Mrs. Carroll's mail box, in hub; copper nail	38	47	32.36	77	19	31.20	2,895
Prim. Trav. Sta. No. 79 S, at base of telephone pole, at southeast corner of road forks, in hub; copper nail	38	47	07.60	77	19	31.51	2,505
Prim. Trav. Sta. No. 80 S, at southeast corner of crossroads, in top of stump; copper nail	38	46	52.78	77	19	40.87	1,674
Prim. Trav. Sta. No. 81 S, on east side of road, in root of large stump; copper nail	38	46	39.93	77	19	11.31	2,678
Belleair School, about 1 mile southwest of, 25 feet south and 30 feet west of road forks; iron post stamped "Prim. Trav. Sta. No. 13 S, 1920"	38	46	03.89	77	18	52.57	3,936
Prim. Trav. Sta. No. 82 S, east side of road, 18 feet south of lane, in stump; copper nail	38	45	39.47	77	18	31.83	2,967
Prim. Trav. Sta. No. 83 S, on west side of road, 90 feet north of second-class road south at two mail boxes, in hub; copper nail	38	45	14.76	77	18	10.61	3,012
Prim. Trav. Sta. No. 84 S, 1 foot south of fence post, on south side of lane west to house, in hub; copper nail	38	44	55.73	77	17	46.21	2,726
Prim. Trav. Sta. No. 85 S, on west side of road, in root of oak tree; copper nail	38	44	38.51	77	17	23.37	2,512
Ox Road School, about 2 miles north of, 25 feet south and 12 feet east of road forks; concrete post stamped "Prim. Trav. Sta. 14 S. Elev. 324." Elevation 323.290 feet	38	44	33.55	77	17	14 40	869
Prim. Trav. Sta. No. 87 S, on north side of road, in front of yellow house on hill, in root of oak tree; copper nail	38	44	16.86	77	16	59.93	2,040
Prim. Trav. Sta. No. 88 S, 35 feet east of road, on south side of second-class road, in stump; copper nail	38	44	01.26	77	16	45.03	1,970
Prim. Trav. Sta. No. 89 S, on west side of road, 70 feet north of second-class road west, in root of oak tree; copper nail	38	43	27.15	77	16	52.17	3,498
Prim. Trav. Sta. No. 90 S, on north side of road, 120 feet east of road forks, in oak tree; copper nail	38	43	10.33	77	16	34.17	2,221
Davis store, 150 feet east of, 12 feet east of center of road, 3 feet north of telephone pole, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 15 S"	38	43	07.41	77	16	15.21	1,532
Prim. Trav. Sta. No. 92 S, in front of house 40 feet west of road, in root of pine tree; copper nail	38	42	45.92	77	15	48.69	3,024
Prim. Trav. Sta. No. 43 B (previously described)	38	42	24.22	77	15	31.98	2,564
Occoquan Bridge, 80 feet north of north end of highway bridge over Occoquan Creek, 10 feet west of road, on top of large rock; bronze tablet stamped Prim. Trav. Sta. No. 16. Elevation 20.247 feet	38	41	11.79	77	15	44.50	7,394

From Lorton south along Southern Ry. to Colchester and west and north to Washington and Richmond highway. (By D. S. Birkett in 1920.)

Lorton station, about 600 feet north of (previously described)	38	42	20.17	77	13	16.50	.....
Lorton station, center line of track	38	42	10.37	77	13	19.68	1,020
Overhead crossing	38	41	48.53	77	13	26.77	2,280
Milepost 19 from Washington	38	41	03.53	77	13	39.79	4,667
Colchester, Prim. Trav. Sta. No. 1 on concrete abutment of undergrade crossing	38	40	16.29	77	14	05.67	5,200
Occoquan railroad bridge, on curtain wall abutment, east end of bridge; painted square	38	40	04.90	77	14	22.53	1,766
Occoquan bridge, center line	38	40	07.90	77	14	18.09	464
Colchester station, 0.4 mile west of; Prim. Trav. Sta. No. 35 B, 5 feet west of second-class road up Occoquan Creek, at edge of field, in top of 12-inch oak stump; copper nail. Elevation 85.46 feet	38	40	23.32	77	13	23.36	1,574
Prim. Trav. Sta. No. 36 B, 800 feet west of road forks, on concrete culvert over small creek, south end; chiseled square. Elevation 33.95	38	40	35.66	77	14	41.63	1,914
Prim. Trav. Sta. No. 37 B, in Y, at road forks, 30 feet south of stone steps, painted "P. T. 37 B"; top of hub	38	40	43.53	77	14	52.30	1,162

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From Lorton south along Southern Ry. to Colchester and west and north to Washington and Richmond Highway—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. No. 55 B, just north of clearing north of house, in root of oak tree; copper nail	38	41	13.15	77	14	32.56	3,383
Prim. Trav. Sta. No. 56 B, in small stump, north side of T road west; copper nail	38	41	25.52	77	14	15.32	1,852
Prim. Trav. Sta. No. 57 B, near dim road forks, about 300 feet south of hollow, on 10-foot bank, 40 feet west of road, in small stump; copper nail	38	41	43.58	77	14	14.22	1,829
Prim. Trav. Sta. No. 40 B (previously described), at road forks, at sign marked "Government Reservation"	38	42	10.39	77	14	42.59	3,525

Magnetic declination, 4° 23′ W., 1920.

From forks of telegraph and gravel roads southwest to a point two miles southwest of Alexandria. (By D. S. Birkett in 1920.)

Prim. Trav. Sta. No. 5 (previously described)	38	46	02.35	77	07	17.25	.....
Prim. Trav. Sta. No. 63 B, northeast corner of T road north, in wooden culvert; copper nail	38	46	28.56	77	06	41.49	3,880
Prim. Trav. Sta. No. 64 B, on north side of road, 100 feet west of private crossroads, in concrete culvert over small stream; chiseled square	38	46	54.95	77	06	17.41	3,282
Prim. Trav. Sta. No. 65 B, east side of private T road south, 21 feet north of intersection, near telephone pole, in hub; copper nail	39	47	07.78	77	05	49.63	2,554
Prim. Trav. Sta. No. 66 B, 20 feet south of Y in road, in intersection, in root of cedar tree; copper nail	38	47	18.76	77	05	15.54	2,918
Intersection of Alexandria and Franconia road and telegraph road, in concrete abutment of steel bridge over Pike Branch; bronze tablet	38	47	35.70	77	05	02.40	2,000
Prim. Trav. Sta. No. 45 S (previously described)	38	47	54.45	77	04	48.39	2,205

South from Lewis Chapel to Occoquan Bay. (By D. S. Birkett in 1920.)

Lewis Chapel crossroads (previously described)	38	41	13.94	77	12	31.75	.....
Prim. Trav. Sta. No. 68 B, 14 feet east of T. B. M. 145.8, 40 feet north of dim road forks, 4,000 feet south of Lewis Chapel, on west side of road, in root of twin oak tree; copper nail	38	40	34.44	77	12	30.26	3,998
Prim. Trav. Sta. No. 69 B, temporary bench mark 138.3, one-fourth of a mile south of Lewis Chapel, at road forks, 240 feet north of small house, on east side of road, in small stump; copper nail	38	40	10.75	77	12	33.11	2,409
Prim. Trav. Sta. No. 70 B, at private-road crossing, 50 feet south of intersection, in very small stump; copper nail	38	39	53.95	77	12	29.98	1,718
Prim. Trav. Sta. No. 71 B, 900 feet due southeast of J. T. Haislaip's house (Belmont Farm), 30 feet southwest of south corner of orchard fence, in concrete post, bronze tablet	38	39	36.58	77	12	01.56	2,862

Magnetic declination, 5° 57′ W.

Southwest from Lewis Chapel to a point on the Richmond, Fredericksburg & Potomac R. R. 1 mile north of Colchester.

Lewis Chapel crossroads (previously described)	38	41	13.94	77	12	31.75	.....
Lewis Chapel, 0.5 mile southwest of, Prim. Trav. Sta. No. 72 B, 45 feet northeast of intersection of private gravel roads, on west side of road, 100 feet west of small stream; copper nail in stump	38	40	59.78	77	13	03.26	2,878
Lewis Chapel, 0.75 mile southwest of, Prim. Trav. Sta. No. 73 B, opposite very old frame house (unoccupied) at top of steep hill, 8 feet north of gum tree, on south side of road, in hub; copper nail	38	40	47.60	77	13	15.97	1,591
Prim. Trav. Sta. No. 33 B, in plank, east side of second-class road crossing, about 1 mile north of Colchester on Richmond, Fredericksburg & Potomac R. R.; copper nail	38	40	51.71	77	13	42.08	2,108
Prim. Trav. Sta. No. 1, at Colchester station (previously described)	38	40	16.29	77	14	05.67	4,042

Magnetic declination, 5° 56′ W.

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

Along highways from Barker's crossroads on Rolling Road and south to Sydenstricker Chapel (Pohick School). (By D. S. Birkett in 1920.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Barkers crossroads, Prim. Trav. Sta. No. 3 (previously described).	38	45	34.08	77	13	04.80	.....
Barkers crossroads, 50 feet north of Davis's store, 15 feet northwest of road, at T road east in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 9 B"	38	45	34.13	77	13	04.58	20
Prim. Trav. Sta. No. 58 B, at intersection of private-road forks northwest, in hub; copper nail	38	45	48.01	77	13	19.86	1,850
Prim. Trav. Sta. No. 59 B, at road forks, in root of large oak tree; copper nail	38	46	16.35	77	13	56.43	4,075
Prim. Trav. Sta. No. 60 B, 20 feet south of intersection of Rolling Road and old Fairfax Road, in hub; copper nail	38	46	41.53	77	14	15.47	2,960
Prim. Trav. Sta. No. 61 B, on west side of Pohick Creek, at ford, in gum stump; copper nail	38	46	21.54	77	14	33.28	2,466
Prim. Trav. Sta. No. 75 B, 100 feet south of T road east, 20 feet south of large pine tree, on east side of road, on top of stump 3 feet high; copper nail	38	45	45.85	77	14	43.53	3,700
Sydenstricker Chapel (Pohick School), near intersection of crossroads, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 10 B"	38	45	21.54	77	14	19.61	.....

Magnetic declination, 5° 42′ W.

West along Southern Ry. from Seminary station to Fairfax station. (By H. S. Senseney in 1920.)

Prim. Trav. Sta. No. 47 S (previously described)	38	48	19.14	77	05	16.66	.....
Cameron Run, 850 feet east of, on top of southwest corner of south abutment of Southern Ry. bridge, about 4 feet above track; aluminum tablet stamped "54, Prim. Trav. Sta. No. 17 S, 1920"	38	48	23.06	77	06	24.52	5,386
Lincolnshire station, 12 feet south and 25 feet west of road crossing, in hub P. T. 98 S; copper nail	38	48	05.51	77	08	02.90	7,986
Edsall, 35 feet west of station, 23 feet south of south rail of south track, in concrete post; bronze tablet stamped "Prim. Trav. Sta. No. 19"	38	47	42.39	77	09	28.64	7,179
Springfield, 510 feet east of station, in west abutment of railroad bridge over Back Lick Run, in top of stone at south end; aluminum tablet stamped "215, Prim. Trav. Sta. No. 20 S, 1920"	38	47	48.11	77	11	00.70	7,309
Prim. Trav. Sta. No. 101 S., at southeast corner of second-class road crossing, on culvert; chiseled square	38	47	44.57	77	11	51.74	4,055
Prim. Trav. Sta. No. 102 S., in north end of east abutment of bridge over Accotink Creek; chiseled square	38	47	34.28	77	13	03.09	5,743
Ravensworth, 22 feet north of northeast corner of station, Prim. Trav. Sta. No. 103 S., in hub; copper nail	38	47	46.09	77	14	14.06	5,744
Prim. Trav. Sta. No. 104 S., in center of southbound track under highway bridge over railroad; copper nail	38	47	45.32	77	14	55.31	3,265
Burke, 30 feet east of operator's window at station, Prim. Trav. Sta. No. 105 S., in north end of platform; copper nail	38	47	42.91	77	16	12.03	6,079
Burke, 0.25 mile west of, Prim. Trav. Sta. No. 106 S., 15 feet south of track, 50 feet west of road crossing, 5 feet below line of track, in top of southeast corner of concrete culvert; aluminum tablet stamped "262 Prim. Trav. Sta. No. 22S, 1920"	38	47	51.33	77	16	31.39	1,75
Prim. Trav. Sta. No. 107 S., near center of side track, on east edge of second-class road crossing, 230 feet east of trestle over Pohick Creek; copper nail	38	47	53.97	77	17	02.39	2,466
60 feet west of road crossing, 9 feet south of track and 7 feet east of telephone pole; in top of concrete post, tablet stamped "24S"	38	47	51.06	77	18	06.68	5,098
Sideburn, 25 feet east of station, Prim. Trav. Sta. No. 109 S., about 6 inches south of north rail of southbound track, in tie; copper nail	38	48	00.33	77	18	33.38	2,312
Prim. Trav. Sta. No. 77 S, Fairfax station (previously described).	38	47	59.91	77	19	41.06	5,356

From Springfield station south on highway about 1½ miles.

Springfield, Prim. Trav. Sta. No. 20 S (previously described)	38	47	48.11	77	11	00.70	.....
Prim. Trav. Sta. No. 110 S., on west side of road, 60 feet north of road forks, in root of pine tree; copper nail	38	47	20.34	77	11	12.14	2,957
Crossing of Back Lick and old Fairfax roads, in concrete post; bronze tablet	38	46	45.25	77	11	05.67	3,594
Prim. Trav. Sta. No. 27 B., 1½ miles south of Springfield (previously described)	38	46	42.01	77	10	43.47	1,795

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From a point 1.25 miles south of Lincolnia along highway to Lincolnia.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. No. 23 B (previously described)	38	46	55.80	77	08	46.63	.....
Prim. Trav. Sta. No. 112 S, on south side of road at T road north, in root of tree; copper nail	38	47	02.51	77	08	11.05	2,895
Prim. Trav. Sta. No. 113 S, east side of road, at T road west, in root of oak tree; copper nail	38	47	37.71	77	08	13.96	3,570
Lunt, Prim. Trav. Sta. No. 114 S, railroad trestle over highway, on south end of east abutment; chiseled square	38	47	54.30	77	08	04.48	1,839
Prim. Trav. Sta. No. 98 S, Lincolnia (previously described)	38	48	05.51	77	08	02.90	1,144

From a point 1 mile north of the Ox Road School east to crossroads, 0.5 mile northwest of Silver Brook School. (By D. S. Birkett in 1920.)

Prim. Trav. Sta. No. 88 S (previously described)	38	44	01.26	77	16	45.03	.....
Prim. Trav. Sta. No. 90 B, in stump at road forks; copper nail	38	44	11.45	77	16	31.35	1,494
Prim. Trav. Sta. No. 91 B, 40 feet east of orchard fence where private road enters woods, in root of pine tree; copper nail	38	44	16.26	77	16	08.47	1,878
Prim. Trav. Sta. No. 92 B, at crossroad near creek, in root of birch tree; copper nail	38	44	05.70	77	16	00.80	1,230
Prim. Trav. Sta. No. 93 B, 30 feet east of crossroads gate, in root of birch tree; copper nail	38	43	41.34	77	15	28.79	3,538
Prim. Trav. Sta. No. 47 B (previously described)	38	43	41.12	77	15	03.25	2,023

Magnetic declination, 5° 46′ W.

From Olivet Chapel southeast via Triplett place to forks of Gravel and Telegraph roads.

Prim. Trav. Sta. No. 23 B (previously described)	38	46	55.80	77	08	46.63	.....
Prim. Trav. Sta. No. 94 B, 100 feet southeast of white farm house, in root of locust tree; copper nail	38	46	41.69	77	08	08.38	3,348
Prim. Trav. Sta. No. 95 B, in small wooden bridge over Dogue Creek; copper nail	38	46	28.74	77	08	04.15	1,352
Prim. Trav. Sta. No. 96 B, Humphreys place, about three-fourths of a mile west of fork of Telegraph and Gravel roads, 50 feet soutneast of white house on edge of hill, in root of maple tree; copper nail	38	46	12.32	77	08	02.02	1,670
Prim. Trav. Sta. No. 5, at forks of Telegraph and Gravel roads (previously described)	38	46	02.35	77	07	17.25	3,686

Magnetic declination, 4° 22′ W.

From crossroads 1.5 miles south of Burke southwest to Ox Road School. (By D. S. Birkett in 1920.)

Prim. Trav. Sta. No. 88 B (previously described)	38	46	37.09	77	16	33.48	.....
Prim. Trav. Sta. No. 113 B, 15 feet northwest of road forks, 2.5 feet from burned stump, in hub; copper nail	38	46	23.75	77	17	08.16	3,062
Prim. Trav. Sta. No. 114 B, at T road, 10 feet north of oak tree, 15 feet west of center line of road, in hub; copper nail	38	46	06.90	77	17	19.00	1,912
Prim. Trav. Sta. No. 115 B, at road forks, in oak root; copper nail	38	45	47.85	77	17	22.68	1,950
Prim. Trav. Sta. No. 116 B, at center of road forks, 15 feet southwest to marked tree, in hub; copper nail	38	45	27.89	77	17	41.34	2,504
Prim. Trav. Sta. No. 117 B, 60 feet north of creek at ford, 5 feet west of center line of road; copper nail in ash root	38	45	07.07	77	17	33.40	2,199
Prim. Trav. Sta. No. 86 S, 2 miles north of Ox Road School (previously described)	38	44	33.55	77	17	14.40	3,710

Magnetic declination, 5° 56′ W.

From Lee Chapel to point 1 mile northwest of Pohick School. (By D. S. Birkett in 1920.)

U. S. Geological Survey permanent bench mark; Lee Chapel (Prim. Trav. Sta. No. 2, 1911) (previously described)	38	45	19.75	77	16	37.25	.....
Prim. Trav. Sta. No. 118 B, at T road, in pine root; copper nail	38	45	06.81	77	16	05.94	2,804
Prim. Trav. Sta. No. 119 B, 300 feet west to creek, 60 feet west of old mill barracks, in stump; copper nail	38	45	22.11	77	15	48.92	2,062
Prim. Trav. Sta. No. 120 B, 500 feet south of house, 5 feet west of center of road, in oak root; copper nail	38	45	33.00	77	15	17.68	2,715
Prim. Trav. Sta. No. 77 B, 1 mile northwest of Pohick School (previously described)	38	45	58.39	77	15	09.94	2,646

Magnetic declination, 5° 48′ W.

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From point near Gunston Hall to Sandy Point. (U. S. C. & G. S. station.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. No. 1, 1918, School of Topography (previously described)	38	39	29.33	77	09	42.96	.....
Prim. Trav. Sta. No. 108 B, 500 feet northeast of road forks, 10 feet east of roads, in tree root; copper nail	38	38	58.96	77	09	52.70	3,168
Prim. Trav. Sta. No. 109 B, 150 feet north of creek, 20 feet east of road, in root of 2-inch beech tree; copper nail	38	38	45.75	77	10	15.80	2,267
Prim. Trav. Sta. No. 110 B, south side of road, 30 feet from center of road, in pine root; copper nail	38	38	41.73	77	10	55.80	3,198
Prim. Trav. Sta. No. 111 B, at road forks, in pine root; copper nail	38	38	30.11	77	11	22.84	2,445
Prim. Trav. Sta. No. 112 B, at road fork, in oak root, "No trepassing" sign on tree; copper nail	38	38	00.72	77	11	55.00	3,918
U. S. Coast and Geodetic Survey triangulation station, Sandy Point	38	37	57.11	77	12	46.84	4,130

Magnetic declination, 5° 37′ W.

From a point about 2 miles southwest of Alexandria west along old Fairfax Road.

Prim. Trav. Sta. No. 67 B (previously described)	38	47	35.65	77	05	02.48	.....
Prim. Trav. Sta. No. 74 B, forks of Alexandria and Franconia road, 0.7 mile west of private T road north, east end of gate, 25 feet east of intersection, in stump near telephone pole; copper nail	38	47	29.81	77	05	50.42	3,839
Prim Trav. Sta. No. 82 B, private T road north, 25 feet south of old Fairfax Road, in root of large cherry tree; copper nail	38	47	29.58	77	06	08.79	1,452
Prim. Trav. Sta. No. 83 B, on south side of road, about 170 feet east of large frame house south of road, on top of concrete culvert; chiseled square	38	47	19.81	77	06	46.70	3,160
Prim. Trav. Sta. No. 3 (previously described)	38	47	10.63	77	07	20.30	2,816

Magnetic declination, 5° 32′ W.

From a point 1.5 miles south of Lee Chapel over highways to Burke.

Prim. Trav. Sta. No. 86 B (previously described)	38	44	33.55	77	17	14.40	.....
Prim. Trav. Sta. No. 84, in south corner of bridge over South Run; copper nail. Elevation 323.78 feet	38	44	50.80	77	16	55.28	2,313
U. S. Geological Survey position at Lee Chapel, Prim. Trav. Sta. No. 2, Va. 1911 (new value)	38	45	19.75	77	16	37.25	3,259
Prim. Trav. Sta. No. 85 B, 10 feet east of creek, 8 feet south of road, in stump; copper nail	38	45	31.32	77	16	24.90	1,527
Prim. Trav. Sta. No. 86 B, 50 feet west of road fork, in root of large oak tree; copper nail	38	45	52.57	77	16	22.74	2,158
Prim. Trav. Sta. No. 87 B, in east side of wooden bridge; copper nail	38	46	12.43	77	16	19.82	2,022
Prim. Trav. Sta. No. 88 B, 10 feet northeast of crossroads, 1.5 miles south of Burke, about 100 feet west of large dead tree, in hub; copper nail	38	46	37.09	77	16	33.48	2,720
Prim. Trav. Sta. No. 89 B, 25 feet from center of T road, in northeast corner near fence post, in hub; copper nail	38	47	01.91	77	16	46.57	2,718
Prim. Trav. Sta. No. 105 B, 600 feet west of Burke, northeast abutment of iron bridge, in sandstone rock; chiseled square	38	47	33.25	77	16	24.28	3,630
Prim. Trav. Sta. No. 105 S, Burke (previously described)	38	47	42.91	77	16	12.05	1,376

Magnetic declination, 6° 01′ W.

From point near Lewis Chapel to Cone Creek.

Lewis Chapel crossroad, 50 feet southwest of (previously described)	38	41	13.94	77	12	31.73	.....
Prim. Trav. Sta. No. 97 B, at road fork, 8 feet west of W. D. Dean's mail box, in top of concrete post; tablet stamped "28 B"	38	40	07.50	77	11	14.02	9,119
Prim. Trav. Sta. No. 98 B, 100 feet east of house, at road turn, in tree root; copper nail	38	39	36.70	77	11	10.28	3,131
Prim. Trav. Sta. No. 99 B, at road fork, 30 feet north of intersection; copper nail in stump	38	39	20.94	77	11	12.59	1,604
Prim. Trav. Sta. No. 100 B, at road fork, near end of road, 150 feet from shore line, in top of concrete post; tablet stamped "29 B"	38	39	08.65	77	11	37.89	2,362

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From Edsall to Franconia.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. No. 99 S (previously described)	38	47	42.39	77	09	28.64	.....
Prim. Trav. Sta. No. 101 B, 130 feet south of P. C. sign, 0.5 mile north of Franconia station, northbound track, in tree; copper nail	38	47	22.48	77	09	18.67	2,168
Prim. Trav. Sta. No. 102 B, 25 feet southwest of section house 289, northbound track, in tree; copper nail	38	47	04.87	77	09	21.67	1,800
Prim. Trav. Sta. No. 24 B, Franconia station (previously described)	38	46	46.39	77	09	24.95	1,889

Magnetic declination, 5° 00′ W.

From point 2 miles west of Franconia northwest to Southern Ry.

Prim. Trav. Sta. No. 78 B (previously described)	38	46	42.04	77	11	26.33	.....
Prim. Trav. Sta. No. 103 B, 25 feet east of intersection of T road, in stump; copper nail	38	46	56.67	77	11	55.76	2,766
Prim. Trav. Sta. No. 104 B, at intersection of road and telegraph line, in stump; copper nail	38	47	02.77	77	12	18.32	1,894
Prim. Trav. Sta. No. 124 B, 80 feet south of house at road banks, in pine root; copper nail	38	47	13.82	77	12	26.06	1,281
Prim. Trav. Sta. No. 125 B, at small creek, 10 feet east of center of road, in root; copper nail	38	47	21.38	77	12	33.47	968
Prim. Trav. Sta. No. 101 S (previously described)	38	47	44.57	77	11	51.74	4,051

Magnetic declination, 5° 31′ W.

From point 1 mile northwest of Pohick School to point 1.5 miles south of Burke.

Prim. Trav. Sta. No. 75 B (previously described)	38	45	45.85	77	14	43.53	.....
Prim. Trav. Sta. No. 77 B, 1 mile northwest of Pohick School, in road fork, 120 feet east of mail boxes, in root of large oak tree; copper nail	38	45	58.39	77	15	09.94	2,445
Prim. Trav. Sta. No. 106 B, at crossroads, 15 feet south of main road, in stump; copper nail	38	46	18.93	77	15	47.07	3,600
Prim. Trav. Sta. No. 107 B, at road forks, 15 feet north of roads, in base of 12-inch oak tree; copper nail	38	46	33.98	77	16	07.50	2,220
Prim. Trav. Sta. No. 88 B, 1.5 miles south of Burke (previously described)	38	46	37.09	77	16	33.48	2,081

Magnetic declination, 5° 44′ W.

From point 1.3 miles west of Franconia west along old Fairfax Road.

Prim. Trav. Sta. No. 27 B (previously described)	38	46	42.01	77	10	43.47	.....
Prim. Trav. Sta. No. 78 B, about 80 feet east of road forks, on south side of road, in root of pine tree; copper nail	38	46	42.04	77	11	26.33	3,399
Prim. Trav. Sta. No. 79 B, south side of road, on east bank, in root of large twin oak tree; copper nail	38	46	30.89	77	12	12.85	3,857
Prim. Trav. Sta. No. 80 B, on south side of road, in same stump as T. B. M. 292.1; copper nail	38	46	36.47	77	13	07.48	4,368
Prim. Trav. Sta. No. 81 B, and T. B. M. 323.5, on north side of road, in stump; copper nail	38	46	49.86	77	13	30.11	2,252
Prim. Trav. Sta. No. 121 B, intersection of Rolling Road and old Fairfax Road, in hub; copper nail	38	46	45.08	77	14	00.79	2,480
Prim. Trav. Sta. No. 60 B, was erroneously described as being at intersection of Rolling Road and old Fairfax Road. It is about 1,200 feet west, at intersection of second-class road with old Fairfax Road	38	46	41.53	77	14	15.47	1,220

Magnetic declination, 5° 35′ W.

CAMP HUMPHREYS, INCLUDING PARTS OF FAIRFAX, INDIAN HEAD, OCCOQUAN, AND WASHINGTON QUADRANGLES—Continued.

From intersection of old Fairfax Road and Rolling Road north to Ravensworth.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. No. 121 B (previously described)	38	46	45.08	77	14	00.79	.....
Prim. Trav. Sta. No. 122 B, 150 feet north of road fork, 10 feet west of center line of road, in hub; copper nail	38	47	04.51	77	14	17.05	2,354
Prim. Trav. Sta. No. 123 B, at crossroads, 15 feet west of center line of main road, in tree root; copper nail	38	47	18.89	77	14	26.43	1,637
Prim. Trav. Sta. No. 103 S (previously described)	38	47	46.09	77	14	14.06	2,926

Magnetic declination, 5° 48′ W.

From a point on Rolling Road 1.5 miles north of Pohick station east to Accotink station. (By D. S. Birkett in 1920.)

Prim. Trav. Sta. No. 53 B (previously described)	38	44	32.10	77	12	43.23	.....
Prim. Trav. Sta. No. 126 B, northwest corner of field, 4 feet west of center of road, copper nail in stump	38	44	12.52	77	12	28.88	2,285
Prim. Trav. Sta. No. 127 B, 125 feet north of Accotink Creek, at road forks; copper nail in hub	38	43	59.75	77	12	05.55	2,259
Prim. Trav. Sta. No. 128 B, at road forks, edge of roads; copper nail in hub	38	43	51.48	77	12	00.12	944
Point on northbound track of Richmond, Fredericksburg & Potomac R. R., opposite tangent on Camp A. A. Humphreys R. R., School of Topography point, 1918 (previously described)	38	44	06.12	77	11	12.90	4,027

From a point on Alexandria and Franconia road north via Bush Hill to crossing of Southern Ry. and Richmond, Fredericksburg & Potomac R. R.

Prim. Trav. Sta. No. 82 B (previously described)	38	47	29.58	77	06	08.79	.....
Prim. Trav. Sta. No. 129 B, north edge of hill, about 600 feet northwest of brown frame house (Hadden place), west edge of private road, in root of oak tree; copper nail	38	47	52.23	77	06	07.74	2,293
Prim. Trav. Sta. No. 130 B, about 300 feet west of frame house, 40 feet north of creek, north edge of road; copper nail in hub	38	48	05.80	77	06	15.87	1,520
Cameron Run, 850 feet east of; aluminum tablet No. 54 (previously described)	38	48	23.06	77	06	24.52	1,877

From Laurel Grove School east about 1 mile.

NOTE.—This line was not completed; there was no azimuth nor distance check, and the positions are preliminary.

Prim. Trav. Sta. No. 21 B (previously described)	38	46	13.30	77	09	12.77	.....
Prim. Trav. Sta. No. 131 B, about 600 feet southeast of white frame house, in fork of roads; copper nail in hub	38	46	06.29	77	08	42.63	2,490
Station 1914, hub on east side of road	38	45	59.83	77	08	31.94	1,072

Magnetic declination, 5° 30′ W.

From a point 0.5 mile east of Sideburn, south 1 mile, then west.

NOTE.—This line was unfinished; no check azimuth and no closure.

Prim. Trav. Sta. No. 108 S (previously described)	38	47	51.06	77	18	06.68	.....
Prim. Trav. Sta. No. 132 B, 0.5 mile south of railroad crossing, top of hill, 12 feet east of road; copper nail in small stump	38	47	23.69	77	18	09.90	2,781
Prim. Trav. Sta. No. 133 B, T road east, 8 feet east of road, base of mail box; copper nail in hub	38	47	08.02	77	18	12.00	1,594
Prim. Trav. Sta. No. 134 B, T road north, 15 feet south on side of earth bank; copper nail in hub	38	46	47.44	77	18	14.59	2,092
Prim. Trav. Sta. No. 135 B, 20 feet west of T road south, on south side of main road; copper nail in root of stump	38	46	57.28	77	18	34.56	1,869

Magnetic declination, 5° 30′ W.

CAPE HENRY QUADRANGLE.

Along highways near Broad Creek. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Creek triangulation station of U. S. Coast and Geodetic Survey. On north bank of Eastern Branch of Elizabeth River, on lower point where Broad Creek enters, about 175 meters below east end of Norfolk Southern bridge over Broad Creek, on small grassy and high sandy point, marked by cement block, 8 by 8 by 24 inches, bearing brass plate with legend. Reference mark is a cement block, 8 by 8 by 24 inches, bearing brass plate with arrow, set on high ground straight down on north line of woods, distant, 19.916 M. on line 192° 51′ 15″ to right of line to station Broad	36	50	23.76	76	13	46.34	.....
Ingleside station, road crossing, just east of	36	50	33.6	76	14	05.7	1,865
East end of trestle	36	50	38.6	76	14	25.8	1,705
North along Virginian Ry. near west border of quadrangle.							
Tidewater Junction, intersection of Norfolk Southern R. R. with Virginian Ry., south and east rails	36	50	41.5	76	14	37.1	970
Road crossing	36	51	02.4	76	14	42.3	2,155
Road crossing, concrete boulevard to Virginia Beach	36	51	12.4	76	14	44.8	1,031
Road crossing	36	51	41.6	76	14	52.0	3,009
Intersection of Norfolk Southern R. R. to Cape Henry and Virginian Ry	36	51	47.8	76	14	53.5	647
Road crossing	36	52	02.2	76	14	57.1	1,478
Northeast along Norfolk Southern R. R.							
Road crossing	36	51	55.4	76	14	31.2	1,531
Adkinson station, road crossing at, south rail joint opposite shelter house	36	52	00.5	76	14	25.2	1,106
Foxhall, road crossing east of	36	52	11.8	76	13	58.8	2,429
Halstead, switch point	36	52	27.5	76	13	21.8	3,396
Dennys station, road crossing east of	36	52	48.8	76	12	31.6	4,614
South rail, east bank of canal	36	52	50.7	76	12	27.2	409
Road crossing	36	52	57.1	76	12	12.0	1,392
Steel smoke stack, about 0.6 mile northeast of Burtons station	36	53	19.4	76	12	23.1	2,432
Burtons, road crossing at	36	53	08.2	76	11	46.0	3,225
Road crossing, northwest of white house with green shutters, brick chimney, picket fence to water bank, near point of curvature of railroad	36	53	19.6	76	11	19.0	2,477
Road crossing, T road junction, 30 feet south of south rail	36	53	23.7	76	11	04.1	1,280
Diamond Springs station, road crossing east of	36	53	25.9	76	10	50.8	1,100
Road crossing	36	53	31.9	76	10	14.6	3,004
Lake Smith, 50 feet east of shelter house, 15 feet south of railroad; iron post stamped "Prim. Trav. Sta. No. 1, 1917"	36	53	35.7	76	09	53.5	1,753
East end of long trestle	36	53	38.7	76	09	42.8	922
East end of short trestle, 160 feet west of road crossing	36	53	40.6	76	09	35.7	612
Shelton, road crossing, 40 feet east of	36	53	57.6	76	08	47.1	4,099
Beechwood, road crossing, 40 feet east of	36	53	57.7	76	08	15.5	2,638
Road crossing, southeast of frame building on piles, 0.25 mile west of power house	36	54	06.1	76	07	32.7	3,581
Bayville, chimney on power house, U. S. Coast and Geodetic Survey triangulation station	36	54	08.4	76	07	13.5	1,577
Bayville, road crossing near	36	54	13.2	76	07	07.0	719
Buchanan siding, switch point	36	54	26.8	76	06	25.7	3,627
West abutment of long trestle	36	54	27.4	76	05	42.2	3,531
Lynnhaven Inlet, east abutment of trestle over	36	54	25.5	76	05	20.2	1,798
North rail opposite Third Street station	36	54	35.3	76	04	26.3	4,493
James Fishery, 20 feet north of railroad, 10 feet west of road crossing; iron post stamped "Prim. Trav. Sta. No. 2, 1917"	36	54	42.6	76	03	51.7	2,906
Switch point, sand pit	36	54	53.7	76	03	16.8	3,050
Granite station	36	55	22.6	76	02	24.0	5,193
Fifty-second Street station	36	55	43.4	76	01	22.4	5,425
Forty-fifth Street station	36	55	39.8	76	00	54.8	2,271
Subtriangulation station	36	55	34.3	76	00	36.1	1,614
Cape Henry Lighthouse, U. S. Coast and Geodetic Survey	36	55	34.80	76	00	26.93	749
Cape Henry Lighthouse, 10 feet north and 12 feet east of entrance; iron post stamped "Prim. Trav. Sta. No. 3, 1917," Elev. 13′	36	55	35.02	76	00	26.73	27
Buchanan siding, about 2,400 feet northeast of, 250 feet north of railroad track, approximately 1,000 feet northeast of red bungalow, west of west end of drawbridge; Coast and Geodetic Survey tablet set in tile filled with concrete. (Point A.)	36	54	32.8	76	05	57.3	.....
Lynnhaven Inlet, about 2,000 feet southwest of, low grassy point on west side of inlet, approximately 800 feet south of drawbridge. (Point B.)	36	54	09.9	76	05	35.7	.....
Lynnhaven Inlet, triangle point about 1,600 feet northeast of east end of trestle over. (Point C)	36	54	35.5	76	05	05.1	.....

NOTE.—Points A, B, and C, were located by triangulation from traverse line.

CAPE HENRY QUADRANGLE—Continued.

South along railroad near west border of quadrangle. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Tidewater Junction, intersection of Norfolk Southern and Virginian railroads, south and east rails	36	50	41.5	76	14	37.1	.....
North end of trestle approach, Virginian Ry. bridge	36	50	18.6	76	14	36.3	2,312
Middle of draw	36	50	10.9	76	14	39.7	833
Center of concrete road crossing	36	49	43.4	76	14	59.6	3,220
Short trestle	36	46	26.0	76	14	52.4	.....
Road crossing	36	45	54.1	76	14	42.5	3,320
Watkins, point of switch at north end of siding	36	45	30.4	76	14	26.9	2,713
Watkins, road crossing, near south end of siding	36	45	12.3	76	14	07.1	2,443

East along highways near south border of quadrangle.

Butts, 1.3 miles northeast of, 30 feet west of road, in southeast corner of yard; iron post stamped "Prim. Trav. Sta. No. 6, 1917"	36	45	14.1	76	12	27.0	.....
Intersection of wood road northwest near county line	36	46	08.0	76	12	15.2	5,528
Road crossing, northeast of colored church	36	46	49.4	76	11	32.7	5,436
Culvert crossing road, white house northeast	36	47	08.8	76	11	07.9	2,815
T road east	36	47	12.6	76	11	04.1	490
Barneys Corner (Thalia), crossroads at; N. 21° 30′ W., 40 feet, to southeast corner of store porch; N. 55° E., 33 feet to southwest corner of store building; N. 82° W., 55 feet, to telephone pole	36	47	50.7	76	10	30.7	4,714
Church	36	47	24.4	76	09	55.7	3,894
Center of small bridge about 870 feet southeast of another bridge	36	47	00.1	76	09	32.9	3,086
T road west	36	46	52.4	76	09	32.2	778
T road east at two mail boxes	36	46	14.2	76	09	13.2	4,163
T road east, about 500 feet southeast of church, east of road, 450 feet southeast of yellow schoolhouse	36	46	01.2	76	09	02.7	1,568
Road south along bank of reservoir, 190 feet south of pumping station	36	45	37.7	76	08	34.5	3,303
Power house, 57.8 feet northeast of northeast corner of, 15.7 feet from 2 by 6 inch post at edge of road, 54 feet from 3-foot oak tree; iron post stamped "Prim. Trav. Sta. No. 7"	36	45	37.2	76	08	31.8	223
T road	36	45	40.4	76	08	26.6	539
Intersection of roads, T road west, 30 feet southeast to corner of wire fence, 30 feet northwest to two pine trees	36	46	05.8	76	07	25.4	5,595
Opposite graveyard gate	36	45	38.0	76	07	06.4	3,207
Center of road at S. J. Sander's gate, 300 feet northwest of T road	36	45	33.1	76	06	58.4	820
Center of bridge	36	45	25.4	76	06	42.8	1,490
Small bridge, 35 feet northwest of, in line with center line of road northeast and east edge of road northwest; nail in stake	36	45	14.8	76	06	30.7	1,457
Intersection of farm road, at angle in main road	36	45	24.3	76	05	57.2	2,894
T road west, at center of north and south road, 40 feet north of bridge over ditch, 45 feet south of mail box 32, 4 feet east of east edge of grass triangle	36	45	35.6	76	05	32.9	2,279
T road west	36	45	55.6	76	05	36.4	2,048
Road fork, 10 feet east of wire fence, 35 feet southwest of pine tree, in center of grass triangle, in line with north edge of road east	36	46	26.8	76	05	41.9	3,182

Southeast along Norfolk Southern R. R. (Currituck Branch).

Land station, road crossing, east rail	36	46	44.2	76	05	07.6	3,307
Land station, 150 feet south of, 50 feet west of road crossing, at southeast corner of yard, 5 feet west and 5 feet north of fence intersection; iron post stamped "Prim. Trav. Sta. 7"	36	46	44.1	76	05	08.1	49
East rail opposite milepost (M. 15. N. 13)	36	46	22.7	76	04	42.5	3,004
Road crossing	36	46	19.4	76	04	38.7	453
Road crossing, 360 feet northwest of house east of track	36	46	03.3	76	04	20.0	2,224
Road crossing	36	45	57.2	76	04	12.9	850
Road crossing, about 80 feet northwest of milepost (M. 14. N. 14)	36	45	45.2	76	03	59.0	1,665
Princess Anne, road crossing at, point on east rail, 46 feet from milepost (M. 13. N. 15)	36	45	06.7	76	03	14.4	5,321
Princess Anne, in Mrs. Bateman's yard, 200 feet from railroad track; stake "Prim. Trav. Sta. No. 8"	36	45	08.7	76	03	13.0	237
Road fork, near edge of north side of triangle formed by, 35 feet southwest of small fence post, in line with center of tree in yard, 12 feet south of road, 25 feet northwest of road, 30 feet northeast of road; stake	36	45	17.1	76	03	04.1	1,114
Center of larger and more westerly of two bridges	36	45	21.1	76	02	23.8	3,301
Culvert, at fork of road, 100 feet east of small white house, 117 feet southeast of T road north	36	45	15.1	76	02	03.2	1,784
Center line of road, opposite Mount Zion Church	36	45	16.3	76	01	39.6	1,922
Nimmo, road fork, 230 feet west of church, opposite telephone pole	36	45	34.8	76	01	02.4	3,558

CAPE HENRY QUADRANGLE—Continued.

Southeast along Norfolk Southern R. R.—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T road west, north of store, south of three mail boxes	36	45	52.5	76	00	54.9	1,893
T road south	36	46	23.9	76	00	33.6	3,612
T road east at three mail boxes	36	46	29.8	76	00	25.0	924
T road west	36	46	56.4	76	00	06.1	3,094
Dam Neck Life Saving Station, 2 miles west of, intersection of T road east at Widgeon's store, on west side of north and south road; iron post stamped "Prim. Trav. Sta. No. 8" Elev. 13 feet	36	47	07.8	76	00	00.2	1,257

Magnetic declination for quadrangle, 5.6° W.

South on Ocean View electric railroad.

Road crossing	36	57	06.3	76	14	55.4	.....
Road crossing near railroad station	36	56	34.7	76	14	46.0	3,285
Pooles station, road crossing at	36	55	46.5	76	14	38.6	4,912
Oxford station, 40 feet southwest of road crossing at, 20 feet south of road west; iron post stamped "Prim. Trav. Sta. No. 5, 1917"	36	54	52.6	76	14	30.8	5,487

East and south along highways to Camden Heights.

Metal culvert, center of road	36	54	57.3	76	14	09.1	1,823
T road north, center of	36	55	00.3	76	13	48.2	1,721
T road north at bend in road	36	54	54.6	76	13	15.5	2,716
Oxford station, 1.5 miles east of, crossroads at Water's store, 18 feet southeast to southwest corner and 20 feet northeast to northwest corner	36	54	54.6	76	12	44.3	2,534
T road north	36	54	37.4	76	12	32.2	1,992
T road northwest on road northeast and southwest	36	54	32.1	76	12	27.0	690
T road southeast	36	54	17.8	76	12	36.4	1,640
Bridge over channel connecting two reservoirs, north end of	36	54	12.7	76	12	26.9	928
Grass triangle, center of	36	53	58.2	76	12	05.6	2,269
T road east to house	36	53	33.5	76	12	21.1	2,795
Cement walk to water works, middle of	36	53	19.8	76	12	24.3	1,406
T road east	36	53	01.6	76	12	26.1	1,854
Canal bridge, north end of	35	52	53.3	76	12	29.7	886
Dennys station, on north rail opposite center of	36	52	48.6	76	12	32.1	512
Road crossing, east of Dennys station (previously located)	36	52	48.8	76	12	31.6	40
Triangulation station near shore line, Ocean View (C. & G. S. station)	36	57	02.7	76	14	42.2	.....

Magnetic declination for quadrangle, 5.5° W.

CHARLES CITY QUADRANGLE.

South along Chesapeake & Ohio Ry. and highways near east border of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost No. 60, west bound track	37	26	13.6	77	01	08.7	.....
Providence Forge, road crossing at east end of station, east-bound track	37	26	26.8	77	02	21.9	6,053
Chickahominy River, south end of bridge over	37	25	56.2	77	02	16.0	3,132
Y road east	37	24	48.3	77	02	41.4	7,171
Road forks at abandoned schoolhouse, in line with T road west, center of road	37	24	32.4	77	02	47.3	1,677
Adams store, 0.5 mile southwest of, center of road forks	37	23	28.6	77	03	11.7	6,743
Second-class road east	37	22	54.0	77	02	56.1	3,717
Ruthville, center of crossroads	37	22	02.7	77	02	29.1	5,631
Manoah Church, in front of, center of road	37	22	39.5	77	01	09.6	7,417
Bimm's Hall, about 1 mile west of, on Ruthville road, at northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 54, 1916"	37	22	22.9	77	00	18.0	4,492
Five Forks, center of triangle at	37	21	30.6	77	00	04.7	5,399
Providence Forge, T road southeast, just east of old mill	37	26	37.8	77	02	44.4	.....
Lane leading west to house	37	27	38.3	77	02	08.3	6,784
T road east and T lane west	37	28	12.2	77	02	00.4	3,487
Wooden culvert over small creek	37	29	17.4	77	02	18.7	6,763

CHARLES CITY QUADRANGLE—Continued.

West along highways near center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Hopewell, center of road at top of rise at C. W. Jones's store	37	23	23.5	77	05	11.2	
Crossroads, at P. H. Rollison's mail box, No. 69	37	23	37.0	77	05	48.1	3,280
Ladd's store, T road west at	37	24	25.4	77	07	15.4	8,581
Roxburgh, about 3 miles south of, at southwest corner of old Samaria Church; iron post stamped "Prim. Trav. Sta. No. 55, 1916"	37	25	08.2	77	08	18.9	6,708
Schoolhouse No. 5, center of road in front of	37	24	21.4	77	08	23.3	4,742
Road southeast at abandoned schoolhouse	37	23	40.9	77	08	33.8	4,187
Road west at old store building, at mail box No. 14	37	22	35.1	77	09	36.0	8,330
Lane south, 12 feet northwest to cedar tree at west edge of road	37	22	18.2	77	10	53.5	6,485
Wayside, 4-foot oak tree, on south edge of road, 35 feet northwest of Bimm's store	37	22	23.0	77	12	00.3	5,419
River road, at road east, center of triangle, at foot of hill to south	37	22	33.9	77	13	29.5	7,285
Malvern Hill post office, 0.5 mile southeast of, at schoolhouse, T road south	37	22	44.4	77	14	05.5	3,099
Malvern Hill post office, about 800 feet northwest of, road forks at road northeast	37	23	05.0	77	14	34.3	3,123

North along highways near west border of quadrangle.

T road west, 25 feet north to three mail boxes, on east side of road	37	24	37.2	77	14	56.9	
Runnimede stock farm, T road southeast at mail box for	37	25	33.5	77	14	27.7	6,161
Glendale, road forks at store	37	26	45.4	77	13	50.8	7,860
Road north, 30 feet west to E. L. Bates's mail box	37	27	04.9	77	12	48.9	5,370
Elko, railroad crossing just east of depot, eastbound track	37	28	21.0	77	12	44.2	7,705
Lone pine tree at northeast corner of road forks	37	29	05.2	77	12	45.3	4,480

Magnetic declination for east border of quadrangle, 5° 01′ W.; for west border of quadrangle, 4° 37′ W.; near center of quadrangle, 6° 18′ W.

(By J. H. Wilson in 1916–17.)

River triangulation station, on south shore of Tar Bay, on Riverview plantation, 0.25 mile below well-marked ruins of old pier on projection into the bay. Hog-tight wire fence runs north and south to and from river 16.58 meters below station. Marked by tile and iron pipe set in cement and standing 1.5 inches above ground	37	17	06.73	77	11	19.36	
Martha White's store, 575 feet east of, second-class T road	37	16	13.8	77	11	27.0	5,384
E. J. Graves's store, about 200 feet northeast of, center of road forks	37	15	43.7	77	13	06.1	8,572
Road south, at 7 mail boxes on a wheel	37	15	49.1	77	13	53.8	3,895
Gee post office, center of crossroads at	37	16	03.0	77	14	42.5	4,177

Magnetic declination near southwest corner of quadrangle, 4° 33′ W.

Northwest along highways near south border of quadrangle. (By Olinus Smith in 1917.)

Garysville, 0.60 mile northwest of, centre of bridge over Red Point Creek	37	15	10.7	77	09	30.8	
Red Point Creek, 0.60 mile northwest of, T road east	37	15	38.1	77	09	56.0	3,434
Red Point Creek, 1.60 miles northwest of, T road east	37	16	11.6	77	10	48.5	5,437
Red Point Creek, 2.20 miles northwest of, T road north	37	16	13.85	77	11	26.98	3,126
Closure error			1.44			2.68	

Magnetic declination near south border of quadrangle, 5° 50′ W.

DINWIDDIE QUADRANGLE.

East along Seaboard Air Line R. R. near south border of quadrangle. (By J. C. Fales in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 45, about 1,000 feet northeast of, on southeast side of right of way; iron post stamped "Prim. Trav. Sta. No. 4, 1918"	37 00 35.3	77 41 04.0	.....
Road crossing	37 01 03.3	77 40 45.8	3,192
Timber trestle, south end of	37 01 11.5	77 40 38.5	1,022
Plank Road crossing, at center line of, east rail	37 01 42.4	77 39 42.9	5,480
Milepost 42, east rail opposite	37 02 10.9	77 38 52.5	5,007
Dewitt station, opposite door of white waiting room, east rail	37 02 26.3	77 38 33.0	2,213
Road crossing, east rail	37 03 06.4	77 37 41.1	5,852
Butterworth station, opposite door of white waiting room, east rail	37 03 15.0	77 37 22.6	1,734
Milepost 40, 350 feet north of, 40 feet east of track; iron post stamped "Prim. Trav. Sta. No. 5, 1918"	37 03 19.8	77 37 10.8	1,070
Along logging railroad near south border of quadrangle.			
Railroad log dump across mill pond, northeast corner of	37 02 59.1	77 37 13.4	2,110
Timber trestle, north end of	37 02 13.3	77 36 45.2	5,163
Road crossing, road west to Dewitt	37 01 47.4	77 36 27.5	2,989
Along highways near south border of quadrangle.			
Road fork, at north edge of, two 8-inch yellow-pine trees	37 01 24.3	77 35 00.9	7,399
T road, at north point of Y, three 12-inch pine trees, in inclosed triangle	37 01 09.1	77 34 28.7	3,031
Logging railroad crossing, 50 feet south of two unpainted station buildings	37 00 59.6	77 33 54.5	2,936
Along logging railroad near south border of quadrangle.			
Point of switch whence track leads northeast	37 01 18.3	77 33 35.1	2,461
Toe of switch whence track leads south	37 02 04.2	77 32 44.3	6,209
Crossing of "Flatfoot Road" and logging railroad of Camp Manufacturing Co	37 02 05.3	77 32 00.0	3,598
Along highways near south border of quadrangle.			
Two-story gray house of H. L. Reeves, opposite front door of, road	37 01 41.0	77 31 28.6	3,542
T road west to house, road, opposite Fitzhugh McCoy's mail box	37 01 11.6	77 30 52.6	4,166
Road, opposite three mail boxes on south side of road	37 00 56.8	77 30 34.1	2,119

Magnetic declination for south part of quadrangle, 4° 10′ W.

DISPUTANTA QUADRANGLE.

In northwest corner of quadrangle. (By J. H. Wilson in 1916–17.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Gee post office, 1.4 miles southeast of, at road north, 40 feet northeast of J. Krumel's mail box on north side of road	37 14 57.5	77 14 14.4	.....
Prince George courthouse, about 3 miles northeast of, 36 feet west of northwest corner of B. M. Harris's store, at road forks, at foot of mail box; iron post stamped "Prim. Trav. Sta. No. 57, 1917"	37 14 28.8	77 14 51.5	4,179

DISPUTANTA QUADRANGLE—Continued.

Southeast along Norfolk & Western Ry. in south part of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Disputanta, 4,000 feet northwest of depot, at overhead road crossing, on railroad embankment, on north side of track, 15 feet south of northeast corner of concrete abutment; iron post stamped "Prim. Trav. Sta. No. 58, 1917"	37	07	57.2	77	14	33.0	.....
Disputanta, road crossing at depot, middle track	37	07	31.5	77	13	53.8	4,100
Milepost 68, center of middle track	37	07	04.3	77	13	11.9	4,370
Road crossing, 2,150 feet southeast of milepost 67, west-bound track	37	06	18.3	77	12	01.1	7,385
Milepost 66, west-bound track	37	05	58.5	77	11	30.5	3,184
Milepost 65, west-bound track	37	05	27.0	77	10	42.1	5,050
Overhead road crossing, west-bound track directly under, 2,075 feet northwest of milepost 63	37	04	34.2	77	09	21.0	8,470
Milepost 62, west-bound track	37	03	47.5	77	08	09.2	7,495
Milepost 61, west-bound track	37	03	13.7	77	07	17.2	5,430
Milepost 60, west-bound track	37	02	40.3	77	06	25.8	5,365
Waverly, junction of Norfolk & Western and Southern (narrow gauge) railroads, west-bound track of Norfolk & Western	37	02	14.6	77	05	46.4	4,121
Waverly, road crossing, just east of depot, west-bound track	37	02	10.0	77	05	39.2	740
Waverly, 4,070 feet southeast of, road crossing, west-bound track	37	01	44.6	77	05	00.3	4,070
Road crossing, 770 feet southeast of milepost 57, west-bound track	37	00	57.8	77	03	48.5	7,500
Milepost 56, west-bound track	37	00	29.7	77	03	05.4	4,510
Crossroads, 5 miles southeast of Waverly, and 4 miles northwest of Wakefield	37	00	11.2	77	01	04.7	.....
Crossroads, in southeast corner of; iron post stamped "Prim. Trav. Sta. No. 132, 1904" (Bull. 245, p. 146)	37	00	47.5	76	59	39.6	7,818

West along Southern Ry. (narrow gauge) and highways in south part of quadrangle.

Waverly junction	37	02	14.57	77	05	46.35	.....
Waverly, 1 mile southwest of, at east-west road crossing, 420 feet northeast of sign reading "Railroad crossing 1 mile"	37	01	36.7	77	06	23.7	.....
Road crossing, 1,125 feet northeast of milepost 31	37	00	56.6	77	07	03.2	5,170
Newville Church, 550 feet west of crossroads	37	00	45.8	77	10	37.7	.....
Mailbox in front of Dr. Neblet's residence	37	00	11.9	77	12	36.8	10,252
Neblet's mill, just below, center of bridge over Jones's swamp	37	00	02.4	77	13	04.9	2,471

North along highways near west border of quadrangle.

J. D. Grammer's store (old Elms p. o.), in front of, center of road	37	03	07.0	77	14	48.8	.....
Joseph's swamp, center of bridge over, 200 feet southwest of road forks, at road north to Disputanta	37	03	36.1	77	13	54.1	5,323
T road south, about 200 feet south of 1-story white house with green trimmings	37	04	57.7	77	13	39.1	8,344
Warwick Swamp, center of bridge over	37	05	32.9	77	13	39.8	3,564
Mail box 68, 1 mile south of Disputanta, center of road at	37	06	27.2	77	13	32.2	5,536
Station 759	37	07	31.49	77	13	53.75	6,730

Magnetic declination near northwest corner of quadrangle, 4° 02′ W.; near south border of quadrangle, 2° 12′ W.; near west border of quadrangle, 4° 11′ W.

North along highways through center of quadrangle. (By Olinus Smith in 1917.)

Waverly, 4.50 miles west of, at Milton siding, under overhead road crossing on Norfolk & Western Ry., center of west-bound track	37	04	34.25	77	09	20.99	.....
Milton siding, 1.50 miles northeast of, intersection of Baxter and Cabin Point roads, crossroads	37	05	24.2	77	08	35.3	6,249
Blackwater River, bridge over, center of truss	37	06	06.1	77	08	35.6	4,236
Blackwater River, 0.70 mile north of, T road west	37	06	41.8	77	08	29.4	3,639
Blackwater River, 1.40 miles north of, T road	37	07	29.7	77	08	13.9	4,991
Otterdam Swamp, 190 feet northeast of, road fork	37	08	06.1	77	07	50.5	4,132
Otterdam Swamp, 1.00 mile north of, 14.7 feet northeast of nail in oak sapling, 16.4 feet southeast of nail in hickory sapling (instrument station No. 50)	37	08	58.2	77	07	41.0	5,317
Otterdam Swamp, 1.40 miles north of, at branch crossing, center of road	37	09	17.2	77	07	51.1	2,088
T. C. Hobbs's mail box (No. 46), at road forks	37	09	34.1	77	07	56.6	1,758
Hugh Williams's farm, 20 feet south of T road east, 13 feet west of center of road, inside of fence; iron post stamped "Prim. Trav. Sta. No. 1, 1917"	37	09	57.2	77	08	36.9	4,022
Wards Creek, center of road at	37	10	20.3	77	07	54.8	4,118

DISPUTANTA QUADRANGLE—Continued.

North along highways through center of quadrangle. (By Olinus Smith in 1917.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Wards Creek, 1.20 miles northwest of, at mail boxes 16 and 17; center of crossroads	37 11 11.0	77 08 13.1	5,340
Burrows's store, intersection of Pole Run Road and road north to Garysville	37 11 07.2	77 08 51.5	3,139
Burrows's store, 1.70 miles northeast of, T road west	37 12 38.8	77 08 38.2	9,313
Burrows's store, 3 miles northeast of, intersection of road to Newville and road to Burrowsville, T road	37 13 26.8	77 07 56.7	5,892
Garysville, 1 mile southeast of, T road east	37 14 27.4	77 08 19.3	6,395
Garysville, 400 feet north of Burrows's store, at old mill, at road fork east, in center of triangle; iron post stamped "Prim. Trav. Sta. No. 2, 1917"	37 14 53.7	77 09 01.8	4,345

Magnetic declination through center of quadrangle north-south, 5° 50′ W.

DOSWELL QUADRANGLE.

East along highways near south border of quadrangle. (By E. L. McNair in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Ashland, 1 mile southwest of, near entrance to Maplewood Farm, in line with road toward Ashland, 20 feet west of north and south road, 15 feet south of driveway to farm, 30 feet east of southern one of two large brick monuments on either side of driveway at corner of field; iron post stamped "Prim. Trav. Sta. No. 29, 1916"	37 45 10.2	77 29 51.4	.....
Ashland station, about 400 feet south of, street crossing Richmond, Fredericksburg & Potomac R. R.; center of double track	37 45 32.4	77 28 50.1	5,413
T road south	37 45 35.4	77 27 29.5	6,479
Road forks	37 45 42.1	77 26 44.8	3,652
Road forks, road southwest to Richmond	37 45 03.3	77 24 22.0	12,125
Second-class road northwest, at angle in main road	37 45 26.0	77 23 58.2	2,994
Blanton flag station, road crossing, Chesapeake & Ohio Ry. track	37 45 39.7	77 23 01.0	4,794
Crossroads, near Hanover schoolhouse and church	37 45 54.3	77 22 11.8	4,218
Hanover Courthouse (built in 1735), 130 feet in front of, 25 feet northwest of gate at main entrance to courthouse grounds, 1.5 feet outside of iron fence, 110 feet south from soldiers' monument, across road from hotel; iron post stamped "Prim. Trav. Sta. No. 30, 1916"	37 45 46.7	77 21 59.8	1,239
Road forks, road south	37 45 04.8	77 21 20.3	5,294
Etna Mills post office, crossroads at (tie point)	37 45 56.6	77 16 00.0	.....

Along highways diagonally east to west through south part of north half of quadrangle.

Road forks	37 52 37.3	77 15 00.2	.....
T road (private) at mail box	37 52 49.2	77 15 58.3	4,809
Forks of road about 500 feet west of brick house	37 52 36.4	77 17 08.9	5,813
T road west, second-class road south	37 52 27.3	77 17 19.1	1,227
Road forks, west end of grass triangle at, near old schoolhouse	37 51 41.6	77 18 50.6	8,675
T road corners, roads north, south, and east	37 51 43.2	77 19 49.7	4,745
Road forks, T road north	37 51 20.8	77 20 42.3	4,789
Road forks, T road north	37 51 19.0	77 21 09.4	2,181
Doswell, about 7 miles east of, 6 miles north of Hanover Courthouse, on old Washington-Richmond stage road, 20 feet west of center of road, in line with road east to Point Eastern, about 400 feet north of old Needwood Tavern; iron post stamped "Prim. Trav. Sta. No. 35, 1916"	37 50 54.0	77 22 08.9	5,404
Road forks, road northeast	37 51 37.7	77 22 44.3	5,255
T road south, private road	37 51 30.3	77 23 45.4	4,956
Road forks, private road northeast	37 51 18.6	77 24 20.4	3,054
T road south	37 51 00.0	77 25 17.1	4,916
Pamunkey River, center of truss on bridge over, line between Caroline and Hanover counties	37 51 01.1	77 25 40.0	1,837
Garnett flag station, on Chesapeake & Ohio Ry., public-road crossing, railroad track	37 50 54.6	77 26 39.6	4,826
Doswell, intersection of Richmond, Fredericksburg & Potomac and Chesapeake & Ohio railroad tracks at	37 51 33.6	77 27 29.8	5,639
Doswell post office, 0.75 mile west of, 20 feet north and 25 feet west of intersection of crossroads, on bank at edge of woods, south of Doswell School; iron post stamped "Prim. Trav. Sta. No. 36, 1916"	37 51 37.6	77 27 54.3	2,903
Crossroads	37 51 33.6	77 28 39.6	3,654

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DOSWELL QUADRANGLE—Continued.

Along highways near west border in southwest corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks	37 46 00.4	77 29 49.6	.....
Crossroads	37 45 36.8	77 29 53.2	2,404
Prim. Trav. Sta. No. 29	37 45 10.2	77 29 51.4	2,699

Along highways near east border of quadrangle (south two-thirds of quadrangle).

Primary Traverse Station No. 34	37 52 01.1	77 14 49.0	.....
Road forks	37 50 59.4	77 15 46.0	.....
Center of small wooden bridge over creek	37 50 47.0	77 15 31.0	1,730
Road forks, south end of triangle at	37 50 27.9	77 15 24.4	1,998
Center of bridge over small creek	37 49 49.8	77 15 32.7	3,901
Road forks, point is in line with roads east and south	37 49 38.8	77 15 20.9	1,436
T road northwest	37 49 05.2	77 16 00.2	4,633
Mangohick, crossroads at	37 48 35.6	77 16 24.9	3,580
Road forks 20 feet west of oak tree at north end of triangle formed by roads, in line with road east	37 48 30.4	77 15 49.5	2,888
Hebron Church, T road south in front of	37 48 01.2	77 15 38.6	3,069
Road forks	37 47 40.0	77 15 26.2	2,368
T road east	37 46 52.1	77 15 43.9	5,039
Etna Mills post office, crossroads at	37 45 56.6	77 16 00.0	5,754

Magnetic declination for south border of quadrangle, 5° 05′ W.; for south half of quadrangle, 5° 10′ W.; for southwest corner of triangle, 5° 00′ W.; for east border (south two-thirds) of quadrangle, 4° 50′ W.

North along highways and railroad near west border of north half of quadrangle.

Doswell station, intersection of Richmond, Fredericksburg & Potomac and Chesapeake & Ohio railroad tracks	37 51 33.6	77 27 29.8	.....
Doswell station, 0.75 mile north of, at north end of long siding, center of double track	37 52 12.0	77 27 33.2	.....
Milepost 25, Richmond, Fredericksburg & Potomac R. R., center of double track opposite	37 52 40.2	77 27 35.7	2,865
North Anna bridge, center of	37 53 18.3	77 27 43.5	3,904
Richmond, Fredericksburg & Potomac R. R., under overhead wagon bridge, center of track	37 53 54.1	77 27 53.7	3,711
Richmond, Fredericksburg & Potomac R. R., under overhead concrete wagon bridge, center of track	37 55 42.1	77 27 21.9	11,225
Ruther Glen, about 30 feet northeast of corner of station, 30 feet northwest of center of track, in section-house yard, just inside corner of fence; iron post stamped "Prim. Trav. Sta. No. 37, 1916"	37 55 45.7	77 27 14.4	699
Overhead bridge, center of Richmond, Fredericksburg & Potomac R. R. track under	37 56 42.3	77 26 40.2	6,346
Coleman flag station, on Richmond, Fredericksburg & Potomac R. R., road crossing; center of track	37 57 33.2	77 25 47.8	6,643
George flag station, on Richmond, Fredericksburg & Potomac R. R., center of crossing at	37 57 20.2	77 24 03.6	8,453
Mattaponi River, center of iron girder bridge over	37 57 21.7	77 23 14.4	3,942
Penola station, public-road crossing at	37 57 26.4	77 22 15.2	4,772
Road forks, second-class road northeast	37 58 07.4	77 22 54.4	5,204
Crossroads	37 58 24.3	77 23 14.1	2,328
Crossroads, second class	37 58 45.2	77 24 26.9	6,197
Crossroads, second class	37 59 20.3	77 24 48.6	3,953
Penola, 3.75 miles northwest of, near forks of road south to Ruther Glen, 20 feet west of road, 15 feet north of shed; copper nail in root of locust tree, shed painted U. S. B. M. 20"	37 59 28.6	77 25 04.1	1,497
Road forks, 20 feet east of large oak tree	37 59 52.6	77 25 04.1	2,434

Along highways near north border of quadrangle (spur line).

Balty post office and store, 50 feet southwest of, 50 feet west of road southeast, 20 feet north of east and west road, on top of bank; iron post stamped "Prim. Trav. Sta. No. 38, 1916"	37 59 51.9	77 26 45.0	.....

Along highways near north border of quadrangle (main line).

Picadee Road Forks, road	37 59 57.4	77 19 17.1	.....
Road forks	37 59 49.3	77 19 00.0	1,599
Road forks	37 59 06.7	77 17 56.8	6,648
Road forks	37 59 07.5	77 17 07.3	3,960
Road forks, second-class road northwest	37 59 20.0	77 16 24.8	3,632

Magnetic declination near west border of quadrangle, 5° 20′ W.; near north border of quadrangle, 5° 20′ W.

HOLLAND QUADRANGLE.

Northwest along Virginian Ry. across northeast corner of quadrangle. (By J. J. Charters in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Boaz, road crossing	36	44	48.7	76	45	43.5	.....
Boaz, 74 feet south of southeast corner of station, at edge of small growth of cedar and pine trees; iron post stamped "Prim. Trav. Sta. No. 6, 1918 C"	36	44	49.1	76	45	54.5	894
Opposite milepost 35	36	44	59.6	76	47	09.9	6,232

South along highways near east border of quadrangle. (By J. J. Phelan in 1918.)

Road crossing, 100 feet east of milepost 28, south rail	36	41	10.0	76	45	14.5	.....
Road crossing, south rail	36	40	53.4	76	46	33.1	6,619
Holland, crossing of Main Street, south rail of main line, 5 feet west of center of road	36	40	49.2	76	46	53.0	1,671
Junction of Drumhill and Holland and Franklin roads, north edge of Franklin road	36	40	26.6	76	47	11.5	2,750
T road east	36	38	33.7	76	47	03.4	11,442
Center of triangle formed by junction of three roads	36	38	25.2	76	47	01.2	882
East side of road, 15 feet north of Bush railing at north end of of bridge, 5 feet from edge of approach to bridge	36	37	54.5	76	46	37.8	3,655
South corner of square formed by intersection of roads, 10 feet from corner fence post	36	37	35.4	76	46	20.0	2,410
Center of junction of three roads from Holy Neck, Holland, and Drumhill	36	36	45.6	76	46	51.2	5,646
Holly Neck School, 340 feet east of first T road east of, 6 feet from well at Mr. Hayes's house; iron post stamped "Prim. Trav. Sta. No. 6 P, 1918"	36	36	47.6	76	46	47.6	340
T road north	36	36	54.2	76	45	31.3	6,253
T road junction, 25 feet from corner of picket fence	36	36	55.1	76	45	20.5	874
Center of culvert	36	36	31.9	76	45	11.9	2,447
Center of small culvert	36	35	43.2	76	45	16.0	4,945
Center of intersection of three roads, 12 feet from corner fence post on west, 65 feet from mail box 42	36	35	10.9	76	45	39.7	3,802
East end of bridge	36	34	36.6	76	45	58.4	3,797
Center of crossroads, roads running north and south and east and west	36	34	11.2	76	45	58.9	2,575
Somerton, T road, 12 feet from Longton's mail box	36	34	06.9	76	45	04.2	4,464
Center of T road southeast, 30 feet from a point 6 feet north of mail box 26	36	33	36.5	76	45	04.1	3,080

West along Southern Ry.

East end of bridge, south rail	36	40	41.8	76	47	29.8	3,096
Road crossing, south rail	36	40	39.6	76	47	53.6	1,951
Crossing of road to Cleopus, south rail	36	40	37.1	76	48	39.7	3,760
Elwood, 136 feet west of east end of station, road crossing, south rail	36	40	34.4	76	49	28.2	3,960
East end of bridge	36	40	33.2	76	49	51.5	1,906
Road crossing, south rail	36	40	31.5	76	50	21.7	2,466
Road crossing, south rail	36	40	30.3	76	50	43.4	1,767
Road crossing, 82 feet west of milepost 34, south rail	36	40	27.5	76	51	40.5	4,663
Milepost 35, south rail opposite	36	40	33.9	76	52	43.7	5,190
Lees Mill, 69 feet east of east end of station, road crossing, south rail	36	40	41.4	76	53	35.5	4,291
Road crossing, south rail	36	40	55.0	76	54	11.0	3,204
East end of viaduct over Seaboard Air Line Ry., north rail	36	41	05.3	76	54	33.6	2,116
Road crossing, north rail	36	40	55.9	76	55	09.2	3,055
Franklin, point of frog of switch from Southern Ry. to "joint account" track to Seaboard Air Line Ry	36	40	51.6	76	55	21.8	1,109
Road crossing, south rail	36	40	55.4	76	55	47.8	2,158
Road crossing, south rail	36	41	05.5	76	56	33.0	3,817
Isaac, 49 feet southeast of east end of station, road crossing, south rail	36	41	40.3	76	57	57.5	7,729
East end of bridge A. D. 41.2, north rail	36	42	01.7	76	58	56.6	5,278
Road crossing	36	42	01.3	76	59	05.1	689
East end of bridge 41.7, north rail	36	42	00.6	76	59	29.1	1,956

Magnetic declination for east border of quadrangle, 4.3° W.

HOLLAND QUADRANGLE—Continued.

Northeast along Seaboard Air Line Ry. (By J. J. Phelan in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Delaware, about 1,500 feet east of station, at road crossing; north rail	36	39	01.5	76	59	50.9	.....
Road crossing, north rail	36	39	12.5	76	59	14.1	3,194
West end of stone culvert, north rail	36	39	17.2	76	59	00.2	1,231
Road crossing, 477 feet west of milepost 40, north rail	36	39	30.8	76	58	20.2	3,544
Opposite milepost 39, north rail	36	39	55.7	76	57	07.4	6,444
Road crossing	36	40	19.6	76	55	57.3	6,203
Franklin, High Street, 35 feet north of main line of Seaboard Air Line Ry., 3 feet west of west side of walk; iron post stamped "Prim. Trav. Sta. No. 7, 1918 P"	36	40	31.7	76	55	28.1	2,675
Franklin, intersection of Fourth Avenue and High Street	36	40	40.0	76	55	34.4	985
Franklin, 4 feet east of east end of Southern Ry. station, south rail	36	40	52.4	76	55	29.2	1,322

South along highways near center of quadrangle.

Elwood, center of road crossing at, south rail	36	40	34.4	76	49	28.2	.....
Crossroads, 10 feet northwest from corner fence post, on edge of road south	36	40	17.2	76	49	15.7	2,014
T road	36	39	45.7	76	49	49.7	4,221
Road fork, center of Holland-Franklin road, in line with road to Elwood	36	39	20.2	76	50	27.2	3,997
Crossroads, Franklin-Holy Neck and Holland-Murfreesboro roads, 6 feet southwest of	36	39	04.9	76	51	01.4	3,200
Center of pipe culvert	36	38	42.9	76	51	26.4	3,020
T road southeast	36	38	26.7	76	51	47.4	2,372
Center of pipe culvert under road	36	38	07.1	76	52	04.6	2,430
T road north	36	37	07.1	76	52	10.6	6,083
Angle in road at point where Cleopus road leaves Factoryville-Suffolk road	36	36	40.6	76	52	12.3	2,685
Center of small culvert at edge of field	36	36	25.3	76	51	58.4	1,916
T road south	36	35	53.8	76	50	20.1	8,633
T road north, well traveled	36	35	49.8	76	50	06.1	1,255
Cleopus, center of small culvert, near a small sawmill which constitutes the town, point in road	36	35	38.4	76	49	53.4	1,550
Cleopus, 2,392 feet south of, west side of road, across from T road east through woods; iron post stamped "Prim. Trav. Sta. No. 8 P, 1918"	36	35	19.1	76	49	36.5	2,392
Crossroads	36	35	12.4	76	49	30.2	850
Culvert under road	36	34	54.5	76	50	13.2	3,950
Center line of road, 10 feet in front of Carolina Johnson's mail box, in front of small one-story house with two large chimneys	36	34	49.9	76	50	24.2	1,010
Crossroads, 18 feet from Howell mail box	36	34	17.6	76	51	38.4	6,885
South edge of road, opposite east end of bridge over small river	36	33	24.5	76	51	41.4	5,374

North along highways near west border of quadrangle.

Isaac, 49 feet east of east end of station, road crossing	36	41	40.3	76	57	57.5	.....
Joyners Church, at T road, 10 feet from milepost 2, in root of large oak tree; nail	36	42	05.9	76	57	42.0	2,886
T road northeast	36	42	49.0	76	57	59.4	4,583
T road northwest	36	43	02.0	76	57	58.6	1,323
Side of road, in front of meeting house, 50 feet across road from school	36	43	21.1	76	57	53.8	1,975
Center of crossroads	36	43	54.4	76	57	16.8	4,519
T road east	36	44	12.4	76	56	44.0	3,230
Center of small bridge, directly over center pier and 18 feet from north end	36	44	28.5	76	56	18.8	2,617

Southwest along highways from Delaware to Sunbeam.

Delaware, about 1 mile east of road crossing, north rail	36	39	12.5	76	59	14.1	.....
T road east of Franklin	36	38	05.3	76	58	58.4	6,994
T road west of Sunbeam	36	37	56.6	76	58	56.2	900

HOLLAND QUADRANGLE—Continued.

Southwest along highways from Delaware to Sanderson.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Monroe bridge over Nottoway River, 12 feet northeast of northeast end of approach to, on west edge of embankment	36 37 00.8	76 59 40.1	6,685
Monroe bridge over Nottoway River, 12 feet southwest of southwest end of, on south edge of embankment	36 36 53.5	76 59 44.7	830

Magnetic declination through center of quadrangle, 4.2° W.; in northwest part of quadrangle, 4.3° W.

North along highways near east border of quadrangle.

Holland, at first crossing on Main Street east of, 15 feet southwest of corner fence post, 27 feet northwest of corner fence post	36 40 59.6	76 46 37.2	.....
T road south	36 41 08.6	76 46 03.6	2,883
Holland, 1.5 miles northeast of, at T road south, 40 feet east of tree with sign reading "1½ miles to I. A. Lukes," on north edge of road	36 41 12.3	76 45 40.9	1,887
T road southwest, poorly traveled, in angle of	36 41 37.8	76 45 05.2	.....

Magnetic declination for north half of east border of quadrangle, 5.5° W.

EMPORIA QUADRANGLE.

Along Southern Ry. west from Emporia. (By J. C. Fales in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Water tank, north rail opposite spout of (distance from P. T. S. 6)	36 41 41.5	77 32 40.1	.....
Milepost 75, center line of track opposite	36 42 18.8	77 33 38.6	6,070
Milepost 76, south rail opposite	36 42 48.6	77 34 33.1	5,365
Milepost 77, south rail opposite	36 43 17.8	77 35 27.1	5,296
Durand, south rail opposite shelter at	36 43 21.5	77 35 50.6	1,950
Milepost 78, south rail opposite	36 43 23.6	77 36 31.0	3,300
Crossing of Emporia-Lawrenceville road, 90 feet east of logging road switch; north rail at	36 43 35.1	77 37 14.9	3,750
Milepost 80, north rail opposite	36 44 15.7	77 38 19.6	6,676
Milepost 85, north rail opposite	36 44 56.7	77 42 52.2	.....
Racume depot, north rail opposite	36 44 53.8	77 43 21.1	2,371

South along highways near west border of quadrangle.

Meherrin River, north end of steel bridge across	36 42 50.0	77 44 57.5	.....
Crossing of Camp Manufacturing Co.'s railroad, joint in south rail at east edge of road	36 42 03.6	77 44 27.9	5,276
Timber bridge, 90 feet long, north end of	36 34 13.2	77 44 25.4	.....
Barley, T road west at J. F. Norwood's store	36 33 49.7	77 43 28.0	5,258

South along Atlantic Coast Line R. R. near east border of quadrangle. (By J. C. Fales in 1918.)

Road crossing, 100 feet west of two unpainted unused buildings	36 44 23.2	77 30 06.3	.....
Milepost 60, east rail of south-bound track opposite	36 43 34.5	77 30 44.2	5,809
Semaphore 610, east rail of south-bound track opposite	36 42 57.0	77 31 11.4	4,400
Semaphore 621, east rail of south-bound track opposite	36 42 12.8	77 31 43.4	5,170
North Emporia, 400 feet north of intersection of Atlantic Coast Line and Southern railroads, 12 feet west of west rail of south-bound Atlantic Coast Line track, 20 feet south of semaphore on west side of track; iron post stamped "Prim. Trav. Sta. No. 6, 1918, 103"	36 41 45.7	77 32 03.2	3,180
Emporia depot, 9 feet south of door of white waiting room, joint in west rail of north-bound track	36 41 32.3	77 32 12.9	1,572
Emporia, crossing of center line of Park Street	36 41 08.5	77 32 30.9	2,815
Milepost 64, center line of north-bound track opposite	36 40 41.6	77 32 46.6	3,009

EMPORIA QUADRANGLE—Continued.

South along Atlantic Coast Line R. R. near east border of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost 65, west rail of northbound track opposite	36	39	50.4	77	33	03.4	5,350
Milepost 66, west rail of northbound track opposite	36	38	59.3	77	33	19.9	5,345
Emporia-Graysburg road, crossing of	36	38	22.2	77	33	28.8	3,817
Milepost 68, east rail of northbound track	36	37	17.0	77	33	10.0	6,770
Skippers post office, road crossing at	36	36	42.5	77	32	51.3	3,810
Milepost 70, east rail of southbound track	36	35	38.1	77	32	27.1	6,807
Milepost 71, east rail of southbound track	36	34	46.4	77	32	32.2	5,250
Dahlia Spur, road crossing at	36	33	59.2	77	32	16.5	4,944
Virginia-North Carolina State line, crossing of, on east rail	36	32	42.6	77	31	49.7	8,050

Magnetic declination for west border of quadrangle, 3° 50′ W.

East along Southern Ry. from Emporia. (By H. J. Switzer in 1918.)

Emporia, intersection of west rail of west track of Atlantic Coast Line R. R. and north rail of Southern Ry	36	41	42.3	77	32	05.5	.....
Trestle, southwest end of	36	41	50.5	77	31	24.9	3,411
Milepost 72, north rail opposite	36	42	03.8	77	30	49.0	3,214
Culvert	36	42	09.7	77	30	09.0	3,314

Southwest from Emporia along highways through center of quadrangle. (By J. C. Fales in 1918.)

Road, opposite sign reading "2 miles to First National Bank"	36	40	11.0	77	33	33.7	.....
Fork west	36	39	51.5	77	34	17.9	4,115
Road, opposite sign reading "4 miles to Everett's department store"	36	39	19.0	77	35	33.0	6,956
Railroad crossing on Hitchcock Branch of Southern Ry	36	38	59.6	77	36	05.9	3,331
T road east through woods	36	38	31.1	77	36	37.0	3,847
T road to two-story unpainted house 300 feet east	36	37	48.4	77	37	27.4	5,973
Schoolhouse, new, light brown, 150 feet east of road, road opposite door of	36	37	20.3	77	37	43.5	3,139
Brink store and post office, crossroads at	36	37	04.7	77	38	05.2	2,378
T road west to unpainted house, 250 feet west	36	36	39.6	77	39	09.2	5,810
Brink, 1.75 miles southwest of in southwest corner of Fountain Creek Church yard, large unpainted building, 100 feet south of, 20 feet west of center line of road; iron post stamped "Prim. Trav. Sta. No. 14, 1918"	36	36	30.2	77	39	44.7	3,056
T road east past dismantled house 300 feet east of road	36	36	06.3	77	41	05.1	6,986
T road west through woods	36	35	49.1	77	41	44.8	3,677
Two gate posts (no gate) at entrance to unpainted two-story house 150 feet west, west edge of road opposite	36	35	22.6	77	42	12.5	3,510
Barley, T road west at J. F. Norwood's store	36	33	49.7	77	43	28.0	11,228

East along highways from west border to center of quadrangle.

T road north past unpainted negro house	36	39	58.3	77	44	41.9	.....
Wagon gate to two-story white house of Bert Mitchell, road opposite	36	39	48.3	77	43	34.9	5,555
Ante, crossroads at	36	39	53.8	77	43	10.5	2,065
Large front gate to two story white house of Cortle 200 feet south of road, south edge of road opposite	36	39	57.1	77	42	19.9	4,136
Harris store, at junction of Emporia-Lawrenceville road and road to Brink post office, at southwest corner of road T; iron post stamped "Prim. Trav. Sta. No. 26, 1918"	36	40	05.1	77	41	17.2	5,170
Two gate posts 10 feet apart, at southeast corner of cornfield; point in road between	36	39	46.3	77	41	09.8	2,003
Large wooden gate at entrance to farm yard of J. H. Newsome	36	39	32.1	77	40	17.1	4,523
T road	36	39	11.2	77	39	21.7	4,986
Small stream	36	38	24.7	77	38	55.9	5,150
Timber bridge 100 feet by 16 feet, north end of, at center line	36	37	59.4	77	38	44.3	2,732
Brink store and post office, northeast corner of crossroads at; iron post stamped "Prim. Trav. Sta. No. 27, 1918"	36	37	04.9	77	38	04.7	6,387

Magnetic declination for center of quadrangle, 3° 40′ W.; for west part of quadrangle, 4° 00′ W.

EMPORIA QUADRANGLE—Continued.

Along railroad and highways through center of quadrangle. (By H. J. Switzer in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. No. 6, 1918, at Emporia (see other lists)	36	41	45.70	77	32	03.20	.....
Emporia, Brunswick Avenue crossing, east rail of west track	36	41	30.6	77	32	14.3	1,777
Road crossing, center of east track	36	40	55.7	77	32	39.6	4,084
Road crossing, west rail of west track	36	40	36.4	77	32	48.8	2,094
Road fork south	36	39	48.9	77	31	56.2	6,436
Road south	36	39	26.2	77	31	07.6	4,578

HEATHSVILLE QUADRANGLE.

The following geographic positions in the Heathsville quadrangle were determined by E. L. McNair in 1916 and are based on the positions of the U. S. Coast and Geodetic Survey stations Hack and Great Wicomico Lighthouse.

South along highways through center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Hack triangulation station (U. S. C. & G. S.) This station apparently never had a permanent mark, as no description is given with its position. A few rotten pieces of timber on a slight knoll on bank of Potomac indicate approximate location. The highest part of knoll was taken as position. A local resident thought the original place was about 20 feet farther east, on ground about 4 feet lower. On account of the uncertain location it was decided to connect with Wicomico Lighthouse, a line to which starts from station 494	37	55	50.016	76	18	34.10	.....
T road corners	37	55	09.3	76	18	39.5	4,138
T road corners	37	54	49.6	76	20	05.9	7,208
Crossroads at Gonyon post office	37	54	13.6	76	20	18.9	3,779
Blundon's store, center of road in front of	37	53	34.5	76	20	48.2	4,605
Burgess store and post office, T road corners at, 15 feet north and 10 feet east of, 7 feet from fence line, in line with road southwesterly to ferry; iron post stamped "Prim. Trav. Sta. No. 7, 1916". (Destroyed in 1917)	37	53	00.3	76	20	51.7	3,469
Forks of road	37	52	00.9	76	21	05.0	6,105
Glebe Point, north side of Great Wicomico River, 135 feet northeast of ferry landing, 10 feet east of roadway, in root of oak tree; copper nail, painted "U. S. B. M. 9"	37	50	56.4	76	22	00.0	7,872
T road westerly, second class	37	49	48.4	76	23	11.7	8,968
T road corners	37	49	06.5	76	23	48.2	5,148
T road south	37	48	55.9	76	23	28.4	1,916
Road corners at Wicomico Church, in line with road south and road west, 10 feet southwest of corner of Snow's store	37	48	55.3	76	23	15.9	1,005
Second-class road east, at angle in main road	37	48	12.4	76	22	07.8	6,978
Crossroads	37	47	36.5	76	21	57.9	3,711
Center of small bridge	37	47	30.2	76	22	07.3	985
Forks of road, 120 feet from store door	37	46	23.6	76	22	05.6	6,740
Rehoboth Church (store and post office), 30 feet north and 20 feet east of T road corners at, on bank 35 feet southwest of corner of store building, 3 feet from telephone pole; iron post stamped "Prim. Trav. Sta. No. 8, 1916"	37	46	03.8	76	21	52.2	2,269
T road west	37	45	32.4	76	22	08.7	3,446
T road corner	37	45	31.4	76	22	43.5	2,800
Small brook	37	45	46.3	76	23	44.8	5,153
Rehoboth Church, about 1.75 miles west and 0.7 mile south of along second-class road running west and joining Kilmarnock and Lancaster road, on north edge of road, house stands about 200 feet northeast, in root of small gum tree; copper nail, painted "U. S. B. M. 10"	37	45	50.3	76	23	50.5	610

HEATHSVILLE QUADRANGLE—Continued.

Along highways near south border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T road north	37	46	03.3	76	24	16.6	2,472
Dim road north	37	46	03.6	76	24	31.8	1,222
Road forks	37	45	53.6	76	24	41.4	1,270
T road corners about 200 feet north of White Marsh Church, second-class road east	37	45	33.9	76	25	15.9	3,414
T road northeast	37	45	49.7	76	25	30.1	1,964
T road fork	37	46	04.9	76	26	48.0	6,441
T road south	37	46	04.3	76	27	22.6	2,780
Lancaster, on south side of Main Street, about 150 feet east of courthouse, opposite Lancaster Hotel, 20 feet south of road, 4 feet north of maple tree; iron post stamped "Prim. Trav. Sta. No. 9, 1916"	37	46	10.6	76	27	54.6	2,650
Center of small bridge over creek	37	46	25.5	76	28	15.6	2,258
T road west, corner at	37	47	29.5	76	28	31.1	6,585
Lancaster, 2.5 miles west of, on Lancaster-Lively road, at forks of road leading to Lebanon church and Alfonso post office, 15 feet west of Lancaster-Lively road, 15 feet south of large oak tree in line with road running northwesterly; iron post stamped "Prim. Trav. Sta. No. 6, 1916"	37	47	20.9	76	29	03.6	2,760
Small bridge over creek	37	47	34.4	76	29	27.3	2,340
Dim T road at old store building	37	47	50.3	76	29	59.7	3,063
Center of small wooden bridge over creek	37	52	36.9	76	29	41.8	(5,004)
T road east	37	53	11.6	76	29	56.8	3,715

Along highways diagonally through center of quadrangle from northwest to southeast.

Road east to camp grounds	37	54	03.7	76	29	23.4	4,906
T road corners near Heathsville new high school	37	55	20.1	76	29	04.7	7,874
Heathsville, on public square, 200 feet north of courthouse, 25 feet west of sidewalk; stone post with tablet in top marked "U. S. Coast and Geodetic Survey magnetic station"	37	55	03.1	76	28	21.4	3,870
Second-class road southwest	37	54	56.4	76	27	25.3	4,552
T road north	37	55	02.3	76	26	43.9	3,366
T road south	37	54	57.3	76	26	21.9	1,838
Avalon post office, 150 feet south of, T road east, 15 feet west of road, 15 feet east of wagon shop, under mulberry tree; iron post stamped "Prim. Trav. Sta. No. 12, 1916"	37	54	24.4	76	25	28.2	5,443
Road southwest	37	53	32.6	76	25	08.1	5,479
T road south	37	53	22.2	76	24	18.4	4,120
T road south	37	53	27.9	76	22	52.8	6,886
T road south	37	53	21.6	76	22	29.7	1,954
T road southeast	37	53	33.5	76	21	47.5	3,593
Burgess store and post office; Prim. Trav. Sta. No. 7, 1916, (Destroyed)	37	53	00.0	76	20	51.7	5,591
T road north	37	52	52.2	76	20	08.1	3,600
T road south	37	52	51.1	76	20	01.5	535
T road south	37	52	06.9	76	18	38.0	8,060
Road forks	37	52	01.8	76	18	17.3	1,740
Lilian post office, T road corners at, road south to Fairport	37	51	41.4	76	18	03.1	2,356
Beverlyville post office, T road corners, in front of store	37	51	54.0	76	16	56.0	5,528
Road forks, south road to Reedville, southeasterly road to Fleeton	37	51	00.5	76	16	22.8	6,026
Road forks	37	50	17.5	76	15	46.4	5,249
Road west	37	49	49.5	76	16	03.5	3,146
Great Wicomico Lighthouse (U. S. Coast & Geodetic Survey)	37	48	15.38	76	16	04.32	9,525

Magnetic declination for center of quadrangle, north and south, 5° 43′ W.; for south border of quadrangle 5° 46′ W.; for west border of quadrangle, 5° 38′ W.; through quadrangle, northwest to southeast, 5° 51′ W.

Along highways in the southwest corner of quadrangle. (Checked spur line.)

Prim. Trav. Sta. No. 6, 1916	37	47	20.9	76	29	03.62	.....
Road forks	37	46	50.7	76	29	15.0	3,193
Center of small bridge over creek	37	46	48.6	76	29	48.0	2,654

Along highways near west border of quadrangle.

Station 791, Heathsville high school, T road corners near	37	55	20.09	76	29	04.69	.....
Center of bridge over creek	37	55	53.9	76	29	47.8	4,863

Magnetic declination near west border of quadrangle, 5° 57′ W.; in southwest corner of quadrangle, 5° 40′ W.

HOMEVILLE QUADRANGLE.

West along Norfolk & Western Ry. and highways near north border of quadrangle. (By J. H. Wilson in 1916–17.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost 55, westbound track	36	59	56.0	77	02	13.6	.....
Herma, road crossing, 3,370 feet southeast of milepost 55, westbound track	36	59	35.0	77	01	41.4	3,370
Road crossing, on Southern Ry. (narrow gauge), 2,665 feet southwest of milepost 30	36	59	45.9	77	08	11.8	.....
Waverly, 4 miles southwest of, 6 feet east of signboard, at southeast corner of Marables crossroads; iron post stamped "Prim. Trav. Sta. No. 59, 1917"	36	59	56.5	77	08	31.7	1,941
S. J. Parker's mail box, at road south	36	59	53.1	77	14	10.9	.....

Magnetic declination near north border of quadrangle, 4° 40′ W.

From Marlboro crossroads southwest along highway and Southern Ry. (narrow gage) to Lumberton. (By A. C. Schilling in 1918.)

T road west	36	59	42.9	77	08	40.7	.....
Gray's lumber railroad, a narrow gage spur of Southern Ry., crossing on	36	59	12.3	77	08	45.9	3,118
County-road crossing	36	58	24.8	77	09	05.0	5,051
Railroad switch east	36	58	17.5	77	09	06.6	747
Road crossing, 110 feet south of point of switch	36	57	52.6	77	09	25.5	2,949
North end of trestle, east rail	36	57	23.9	77	09	30.2	2,928
Homeville, 20 feet east of track, about 10 feet north of road, 4 feet west of crossing sign; iron post stamped "Prim. Trav. Sta. No. 1"	36	56	55.3	77	10	19.04	4,905
Center of wooden culvert under railroad, west rail	36	56	37.7	77	10	32.5	2,089
County-road crossing on railroad, east rail	36	56	10.4	77	10	40.7	2,841
North end of twin 24-inch vitrified pipe culvert	36	55	56.2	77	10	51.4	1,676
Road crossing	36	55	23.2	77	11	02.9	3,464
Burt's switch, 714 feet northeast of, at north end of wooden trestle under railroad	36	54	45.1	77	11	08.95	3,888
County-road crossing	36	54	20.0	77	11	23.4	2,794
North end of trestle under railroad	36	53	53.3	77	11	40.3	3,032
Nottoway River, north end of large wooden trestle over; west rail	36	53	42.4	77	11	44.6	1,153
Nottoway River, south end of large bridge over, west rail, 270 feet northeast of county-road crossing leading to sawmill	36	53	31.8	77	11	51.4	1,209
North end of trestle over small creek	36	53	00.9	77	12	15.8	3,695
Lumberton, 20 feet west of track, about 10 feet north of road; iron post stamped "Prim. Trav. Sta. No. 2"	36	52	53.7	77	12	39.1	2,028

East along highways through center of quadrangle.

North end of bridge over creek	36	52	04.1	77	12	28.5	5,081
Center of abandoned railroad crossing road	36	51	26.6	77	12	28.3	3,793
T road to Littleton	36	50	45.6	77	12	01.8	4,674
T road west	36	51	08.9	77	11	48.2	2,603
Railroad crossing on county road	36	51	31.4	77	11	26.6	2,880
West end of iron bridge	36	51	33.8	77	11	27.6	260
T road south, farm road, 730 feet southwest of another farm road	36	51	54.1	77	11	02.1	2,915
T road south, farm road	36	52	09.7	77	10	40.5	2,364
T road north	36	52	21.3	77	10	24.8	1,731
Littleton, 80 feet north of northwest corner of post office and general store, 119 feet south of road forks, 16 feet east of center of road to Yale, 37 feet west of center of road to Sebrell; iron post stamped "Prim. Trav. Sta. No. 3"	36	53	07.9	77	09	18.0	7,182
T road east	36	52	08.0	77	08	31.9	7,124
Surry Lumber Co.'s railroad right of way, 21 feet north of, 18 feet east of center of county road; iron post stamped "Prim. Trav. Sta. No. 4"	36	51	51.7	77	08	23.1	1,795
Sussex-Southampton county line, gate across road, 4 feet west of west edge of bridge across road	36	51	49.6	77	07	44.2	3,169
West end of bridge over swamp	36	51	46.5	77	07	22.6	1,789
Center of gate across road	36	51	35.1	77	06	30.6	4,374
West edge of small cattle-guard pit, center of road	36	51	27.7	77	06	09.5	1,875
Dory, 2.5 miles west of, 35 feet west of center of county road between Waverly and Sebrell, 12 feet south of Surry Lumber Co's. right of way, in forks; iron post stamped "Prim. Trav. Sta. No. 5, 1918 S"	36	51	24.7	77	05	52.0	1,448
Road crossing on Surry Lumber Co.'s right of way	36	51	14.7	77	04	47.1	5,376
Log road crossing road	36	51	22.2	77	03	58.6	4,011
Dory, beginning of spur track east to	36	51	33.0	77	03	13.0	3,866

HOMEVILLE QUADRANGLE—Continued.

From Dory northeast along Surry, Sussex & Southampton Ry. (narrow gage) to east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Dory, 81 feet east of Surry Lumber Co.'s pumping station, 162 feet northeast of northeast corner of freight station, 12 feet south of one pine tree and 9 feet north of another pine tree; iron post stamped "Prim. Trav. Sta. No. 6"	36 51 38.4	77 02 52.9	1,719
Road crossing on railroad	36 51 56.95	77 02 45.85	1,961
Center of large wooden culvert across railroad, 104 feet south of county-road crossing	36 52 17.4	77 02 36.2	2,209
Road crossing on railroad	36 52 42.8	77 02 24.1	2,756
Manry, north end of spur from main line	36 53 22.5	77 02 05.4	4,287
Manry, point of switch at	36 53 26.9	77 02 03.25	486
Road crossing on railroad	36 53 58.8	77 01 48.2	3,443
Surry-Southampton county line, on or near, south end of large wooden trestle over railroad	36 54 28.9	77 01 33.8	3,269
Small road crossing railroad, east rail	36 54 45.3	77 01 23.2	1,859
County road crossing railroad, west rail	36 55 32.1	77 00 44.0	5,713
Dory, 5 miles northeast of, at junction of Surry Lumber Co.'s railroad with county road, 11 feet northwest of northwest rail, 21 feet southeast of center of county road, 47 feet southwest of signpost reading "Railroad crossing"; iron post stamped "Prim. Trav. Sta. No. 7, 1918 S"	36 55 41.7	77 00 34.5	1,241
Farm-road crossing, northwest of northwest rail	36 56 02.7	77 00 13.3	2,730

Along Norfolk & Western Ry. in northeast part of quadrangle.

Road crossing, east rail	36 58 38.2	77 00 14.4	.....
Wakefield, 1.5 miles northwest of, southwest side of track, in north face of concrete foundation to semaphore; bronze tablet set vertically, stamped "111 1917"	36 58 53.3	77 00 37.5	2,421
Small concrete culvert, center of	36 59 08.1	77 01 00.0	2,359
Herma, road crossing, 3,370 feet southeast of milepost 55, northwest-bound track	36 59 35.0	77 01 41.4	4,321

Southeast along Surry, Sussex & Southampton Ry. (narrow gage). (By A. C. Schilling in 1918.)

Dory, Prim. Trav. Sta. No. 6 (previously described)	36 51 38.4	77 02 52.9	.....
Center line of county road and west rail	36 51 12.7	77 03 06.7	2,832
Dory, 1.5 miles south of, northeast corner of intersection of Surry, Sussex & Southampton Ry. and road to Sebrell, 6 feet east of east rail, 22 feet south of intersection of county road and east rail, 27 feet southeast of signpost; iron post stamped "Prim. Trav. Sta. No. 9"	36 51 04.7	77 03 07.6	813
Center of large wooden culvert	36 50 14.1	77 02 24.7	6,193
Center line of county road between Courtland and Ivor	36 50 00.0	77 02 12.6	1,738
Center line of iron culvert, 1,050 feet northwest of center of wooden culvert	36 49 07.4	77 01 27.5	6,454
Vicksville, north side of county road between Courtland and Ivor, 95 feet west of west rail of Surry, Sussex & Southampton Ry., 9 feet north of mail box; iron post stamped "Prim. Trav. Sta. No. 10"	36 48 50.6	77 01 14.5	2,004
Point of switch east to lumber camp, 578 feet northwest of center line of county road	36 48 39.6	77 01 03.6	1,428
Center line of county road, on west rail	36 47 29.4	77 00 03.2	8,629
Sedley, southwest corner of railroad junction, 30 feet south of south rail of Virginian Ry. 8 feet west of west rail of Surry, Sussex & Southampton Ry.; iron post stamped "Prim. Trav. Sta. No. 11" (in Ivor quadrangle)	36 46 29.0	76 59 17.3	7,165

West along Virginian Ry.

Road crossing, 619 feet west of east end of trestle 96 feet long	36 46 28.3	77 00 23.7	5,402
Farm-road crossing	36 46 27.0	77 01 50.9	7,092
Courtland-Ivor road, west side of, 25 feet south of south rail of Virginian Ry., 9 feet southwest of railroad signpost; iron post stamped "Prim. Trav. Sta. No. 12, 1918"	36 46 25.9	77 02 47.1	4,574
Center line of concrete-arch culvert	36 46 26.3	77 03 22.9	2,911
Wilcox siding, south rail at point of switch	36 46 38.6	77 04 00.8	3,296
East end of trestle 143 feet long, south rail	36 46 49.2	77 04 58.3	4,799
East end of trestle, 402 feet long	36 46 54.3	77 05 42.0	3,586

HOMEVILLE QUADRANGLE—Continued.

West along Virginian Ry.—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Sebrell, in corner of engine house, north side of track, bench mark tablet	36	47	06.1	77	07	21.8	8,203
Sebrell, on bank, 28 feet south of south rail of Virginian Ry., 30 feet east of center line of county road, 10 feet southeast of railroad signpost, 9 feet northwest of telephone pole; iron post stamped "Prim. Trav. Sta. No. 13"	36	47	07.2	77	07	34.3	1,016
East end of trestle 70 feet long	36	47	15.0	77	08	37.7	5,215
Nottoway River, east end of trestle 854 feet long over	36	47	21.4	77	09	32.4	4,493
Virginian Ry., 44 feet north of north rail of, center line of farm road; iron post stamped "Prim. Trav. Sta. No. 14"	36	47	29.0	77	10	34.8	5,136
Farm-road crossing, 1,632 feet east of milepost 58	36	47	30.2	77	11	48.4	7,784
Road crossing, south rail	36	47	21.0	77	13	00.9	5,905
Road crossing, south rail	36	47	00.4	77	14	17.8	6,595
South along county road.							
Upson, Prim. Trav. Sta. No. 4 (previously described)	36	51	51.6	77	08	23.1	.....
Gate in fence across road, on line between Sussex and Southampton counties, center line of road	36	51	02.7	77	08	02.5	5,229
Intersection of county road and Upson-Sebrell road	36	50	22.7	77	07	49.0	4,193
Center line of T road west and county road	36	49	07.0	77	07	31.8	7,780
North end of wooden bridge 7 feet long	36	48	03.2	77	07	43.8	6,531
T road, junction of Upson and Petersburg county road with county road to Sebrell	36	47	28.4	77	08	01.3	3,794
Sebrell, Prim. Trav. Sta. No. 13 (described above)	36	47	07.2	77	07	34.3	3,073
Along Southern Ry. south of Lumberton.							
Farm-road crossing	36	52	07.5	77	14	35.5	.....
County-road crossing	36	52	21.6	77	14	07.3	2,701
County-road crossing	36	52	29.0	77	13	37.7	2,521
Trestle 415 feet long, south end of	36	52	36.7	77	13	16.4	1,899
Lumberton, 2.7 feet north of post on north side of Southern Ry. track marked "Railroad crossing," 13 feet east of road to Sussex; iron post stamped "Prim. Trav. Sta. No. 2, 1918"	36	52	53.6	77	12	39.1	3,480
Farm-road forks to left	36	53	15.9	77	12	50.7	2,443
Junction with county road between Lumberton and Sussex	36	53	42.4	77	13	00.1	2,787
Farm-road forks to left	36	53	46.4	77	13	46.2	3,762
Crossroads	36	54	17.8	77	14	36.5	5,182

Magnetic declination for south part of quadrangle, 4.2° W.

Southwest along highways in southwest corner of quadrangle. (By J. J. Phelan in 1917.)

Sedley, 1 mile west of, 150 feet south of Virginian Ry., road crossing	36	46	26.2	77	00	04.8	.....
T road, center of both roads, 20 feet southwest of signboard reading "Vicksville-Pretlow-Sedley road"	36	46	26.0	77	00	23.8	1,540
Center of small bridge	36	46	13.7	77	00	20.0	1,290
Center of small bridge at road fork	36	45	19.0	77	00	12.4	5,566
Center of small bridge about 200 feet downstream from grist mill	36	45	15.9	77	00	16.1	439
T road north at Miss Ella Joiner's mail box	36	45	15.7	77	01	02.4	3,766
Center of small culvert in swamp	36	45	08.6	77	01	12.8	1,107

Magnetic declination along southwest edge of quadrangle, 4.2° W.

IVOR QUADRANGLE.

North along Surry, Sussex & Southampton Ry. and highways near west border of quadrangle. (By A. C. Schilling in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Center line of 2 by 6 foot wooden culvert under railroad	36 57 13.1	76 59 36.8	.....
Small road crossing railroad, east rail	36 57 33.6	76 59 35.9	2,073
Wakefield and Dory road, 50 feet south of intersection with Wakefield and Smithfield road	36 58 01.0	76 59 33.1	2,785
Wakefield, 76 feet from southeast corner of Bank of Sussex and Surry, 18 feet southwest of southwest rail of southeast-bound track of Norfolk & Western Ry., 11 feet southeast of center of road; iron post stamped "Prim. Trav. Sta. No. 8, 1918"	36 58 04.5	76 59 23.4	862
Surry, Sussex & Southampton Ry., center of concrete-arch bridge over	36 58 11.8	76 59 33.7	1,111

West along Virginian Ry. (By J. J. Charters in 1918.)

East end of wooden bridge over creek	36 45 24.4	76 48 41.3	.....
Collosse, northeast corner of Mr. Johnson's store porch, permanent bench mark marked "U. S. G. S."	36 45 40.0	76 49 19.0	3,458
North rail, at edge of road crossing	36 46 12.4	76 50 31.7	6,767
Walters station, opposite center of, south rail	36 46 18.3	76 51 03.6	2,669
Milepost 40, opposite, north rail	36 46 11.5	76 52 11.1	5,533
Blackwater River, east end of wooden bridge over	36 46 05.2	76 53 08.4	4,707
Burdette station, north rail opposite southeast corner of railroad station	36 46 04.6	76 53 38.2	2,428
North rail opposite milepost 42	36 46 09.1	76 54 19.8	3,414
North rail opposite milepost 43	36 46 16.0	76 55 24.1	5,280
North rail opposite milepost 44	36 46 22.9	76 56 28.4	5,280
Road crossing	36 46 27.3	76 57 09.6	3,390
North rail opposite switch block	36 46 30.3	76 58 15.1	5,340
Sedley, southwest corner of railroad junction, 30 feet south of south rail of Virginian Ry., 8 feet west of west rail of Surry, Sussex & Southampton Ry.; iron post stamped "Prim. Trav. Sta. No. 11"	36 46 29.0	76 59 17.3	5,062

Northwest along Norfolk & Western Ry. (By J. J. Charters in 1918.)

Milepost B 373, N 35, north rail opposite	36 48 57.4	76 45 26.2	.....
Milepost B 372, N. 36, north rail opposite	36 49 30.3	76 46 16.2	5,258
Road crossing	36 49 52.3	76 46 49.7	3,521
Dwight, 1.7 miles southeast of, on west side of semaphore 377, in top of foundation of iron ladder; bronze tablet stamped "71 1918"	36 50 23.0	76 47 36.5	4,915
Milepost B 370, N. 38, north rail opposite	36 50 36.6	76 47 57.2	2,181
Milepost B 369, N. 39, north rail opposite	36 51 08.6	76 48 46.0	5,119
Milepost B 368, N. 40, north rail opposite	36 51 42.8	76 49 38.0	5,464
Zuni railroad station, 450 (?) feet east of, in west end of concrete wall of bridge over highway, north side of track; bronze tablet stamped "39 1918"	36 51 59.1	76 50 02.7	2,604
Blackwater River bridge	36 52 04.9	76 50 12.2	980
Milepost N 42, north rail opposite	36 52 52.3	76 51 24.6	7,588
Road crossing	36 53 39.7	76 52 36.9	7,585
Milepost N 44, north rail of middle track opposite	36 53 54.5	76 52 59.8	2,395
Ivor station, opposite center of, north rail of middle track	36 54 24.0	76 53 45.0	4,730
Milepost B 362, N 46, north rail opposite	36 55 00.1	76 54 40.2	5,785
Signal block No. 467, north rail opposite	36 55 21.5	76 55 13.0	3,435
Ivor, 2.56 miles northwest of, on west side of semaphore 475, in concrete foundation of iron ladder; bronze tablet stamped "Elev. 79, 1918"	36 55 47.4	76 55 52.5	4,141
Milepost N 48, B 360	36 56 05.8	76 56 20.8	2,963
Post marking line between Southampton and Sussex counties, 300 feet northwest of milepost N 49, B 359; north rail of north track opposite	36 56 40.2	76 57 13.5	5,513
Signblock 497	36 56 59.2	76 57 42.7	3,053
Milepost N 50, B 358, north rail opposite	36 57 11.4	76 58 01.4	1,958
Wakefield, 1.07 miles southeast of, on west side of semaphore 505, in concrete foundation of iron ladder; bronze tablet stamped "1918 96"	36 57 33.0	76 58 34.4	3,452
Wakefield, Prim. Trav. Sta. No. 8, 1918, Schilling (previously described)	36 58 04.5	76 59 23.4	5,100

IVOR QUADRANGLE—Continued.

South along highways near center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Ivor station, opposite, center of track	36	54	24.0	76	53	45.0	.....
Ivor, 1,600 feet southwest of station, 50 feet east of center of Ivor-Burdette road, 91.1 feet from east corner of brick foundation of residence, 100.8 feet from northeast corner of church foundation; in northeast corner of church lot; iron post stamped (?)	36	54	13.9	76	54	00.2	1,607
Junction of Courtland road	36	53	55.5	76	54	45.7	4,134
Center line of road opposite milepost 2	36	53	05.5	76	54	38.2	5,097
Edge of drive southwest through woods	36	52	39.0	76	54	35.4	2,693
Center line of road opposite milepost 3	36	52	14.1	76	54	28.4	2,578
Ivor, 3.6 miles south of, at crossroads, north side of Zuni-Wakefield road and 40 feet east of Ivor-Burdette road, 49 feet northeast of intersection; iron post stamped "85 1918"	36	51	36.6	76	54	16.7	3,900
Third class T road bearing north	36	50	58.4	76	53	52.5	4,343
T road northeast	36	50	32.0	76	53	14.9	4,057
Creek crossing, center line of road, creek 5 feet wide	36	50	05.0	76	52	44.8	3,655
Junction of road from Zuni to Unity	36	49	43.8	76	52	28.1	2,536
Small wooden bridge, at east end of, center line of road	36	49	18.8	76	52	55.0	3,342
Unity, in west face of northwest brick pier of foundation of Mr. Stevenson's store, 60 feet east of T road; iron post stamped "49 1918"	36	48	45.8	76	53	22.2	4,006
T road bearing south	36	48	22.5	76	53	03.8	2,792
T road bearing south	36	48	14.3	76	52	28.6	2,980
Center line of road opposite mail box 46 (Wilson)	36	47	56.1	76	52	45.8	2,314
Center line of road opposite mail box 56 N	36	47	52.6	76	53	10.5	2,044
T lane to farm house	36	46	53.0	76	53	27.4	6,187
Burdette station, north rail of track opposite	36	46	04.6	76	53	38.2	4,968

North along Sussex Lumber Co.'s railroad.

Ivor station, opposite, center of track	36	54	24.0	76	53	45.0	.....
Crossing of road through woods	36	55	00.5	76	53	41.8	3,700
Second-class road crossing	36	55	30.5	76	53	26.1	3,291
Crossing of Ivor and Smithfield road	36	56	13.9	76	53	03.4	4,762
Wooden trestle, south end of	36	56	37.4	76	52	51.2	2,584
Ivor, 3.1 miles northeast of, at road crossing, 10 feet south of road, 10 feet east of east rail, in top of small concrete culvert; bronze tablet stamped "76 1918"	36	56	53.3	76	52	42.9	1,742
Switch block, switch bearing northeast	36	57	46.4	76	52	27.4	5,523
Second-class road bearing west, crossing of	36	57	59.8	76	52	25.6	1,363
Wooden trestle, south end of	36	58	17.7	76	51	56.7	2,967
Johnson Corners, 116 feet southeast of road crossing, in top of concrete culvert; bronze tablet stamped "40 1918"	36	58	32.0	76	51	36.4	2,197
Side track bearing northeast	36	59	09.3	76	51	15.8	4,124
Old mill stone, on curve of old right of way bearing west	36	59	50.3	76	51	14.0	4,155

Northeast along highway from Ivor to Bobs.

Ivor station, opposite, center of track	36	54	24.0	76	53	45.0	.....
One-mile post of Sussex and Surrey road, center line of road opposite	36	54	28.0	76	52	41.7	5,152
Center line of road opposite mail box 22	36	54	25.0	76	51	45.4	4,587
Lane bearing north	36	54	31.0	76	51	00.8	3,670
T road north	36	54	37.8	76	50	01.4	4,874
Center line of road opposite milepost 4	36	54	27.7	76	49	37.2	2,221
Broadwater Bridge over Blackwater River, west end of	36	54	19.7	76	48	59.2	3,188
T road southeast	36	54	41.0	76	48	34.7	2,940
Intersection of narrow-gage railroad	36	54	54.3	76	48	20.8	1,753
Milepost 6, center line of road opposite	36	55	05.3	76	48	05.0	1,703
T road west on Raynor branch road from Smithfield road	36	55	33.1	76	47	42.2	3,372
Sussex Lumber Co.'s property, center line of road, opposite gate, 60 feet west of house	36	56	24.8	76	47	10.8	5,813
Raynor, 100 feet northeast of T road at, in southwest corner of white church property, 12 feet southwest of southwest corner of church, 75 feet northeast of northeast corner of frame house; iron post stamped "Prim. Trav. Sta. No. 12, 1918 C"	36	56	53.4	76	46	59.2	3,070
T road east to Smithfield	36	57	11.5	76	46	20.0	3,604
Bridge over creek, center line of road at south end of	36	57	38.9	76	46	04.2	3,054
T road west to Bobs	36	58	15.9	76	45	38.3	4,297
Drive to farm house	36	58	41.4	76	45	39.2	2,578
Wooden bridge over creek, south end of	36	59	06.1	76	45	46.0	2,561
T road east	36	59	16.9	76	45	56.9	1,409
T road south	36	59	57.1	76	45	49.6	4,103

IVOR QUADRANGLE—Continued.

Along highways near southeast corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	Feet.
Crossroads, road east to Suffolk	36 46 06.5	76 45 02.7	
T road south	36 45 45.1	76 45 10.7	2,258

Magnetic declination for center of quadrangle, 4.5° W.; for northeast part of quadrangle, 5.5° W.

Along highways in northeast part of quadrangle.

Road crossing on narrow-gage railroad	36 55 18.6	76 45 54.3	
Stotts Corners, crossroads, Ivor-Smithfield and Isle of Wight-Bobs roads	36 55 34.8	76 46 14.0	2,291
T road through woods, at first decided bend in road from Stotts, 15 feet west of center of lane, at point on line of a long straight section of road northwest	36 56 05.7	76 46 11.5	3,133
Raynor, iron post (previously described)	36 56 53.4	76 46 58.2	6,138

Northwest along highways near east border of quadrangle.

T road southwest	36 50 48.2	76 45 10.3	
T road north	36 51 15.1	76 45 13.3	2,735

Northeast along highways near center of quadrangle. (By J. J. Phelan in 1918.)

West side of road, 14 feet from T road to sawmill, 8 feet from mail box	36 45 21.7	76 55 52.3	
T road, 9 feet from corner fence post	36 46 03.4	76 55 30.9	4,561
Baffle, center of road crossing Virginian Ry., north rail	36 46 16.7	76 55 30.3	1,352
Baffle, opposite milepost 43, north rail	36 46 16.0	76 55 24.1	511

Magnetic declination near south border of quadrangle, 4.2° W.

JARRATT QUADRANGLE.

In northeast corner of quadrangle. (By J. H. Wilson in 1916–17.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	Feet.
Belcher post office (abandoned), Jerusalem plank road at, at road northeast, 720 feet southeast of road southwest, at which road forks there is an old store building, at center of triangle; iron post stamped "Prim. Trav. Sta. No. 60, 1917"	36 59 24.6	77 15 16.7	

South along highways near east border of quadrangle. (By J. C. Fales in 1917–18.)

Belcher post office (abandoned), 720 feet southeast of old store building; iron post stamped "Prim. Trav. Sta. No. 60, 1917"	36 59 24.6	77 15 16.7	
Steel bridge across Nottoway River, southeast corner of	36 58 36.5	77 16 10.0	6,510
Wooden gate at entrance to unpainted two-story house, no fence	36 58 10.2	77 16 13.6	2,681
T road to unpainted two-story house	36 57 33.3	77 16 07.7	3,760
Road, opposite corner of woven-wire fence, on west side	36 56 43.3	77 16 27.0	5,295
Road, opposite woven-wire gate to unpainted house, 300 feet west	36 56 00.3	77 16 22.2	4,369
T road west	36 55 25.2	77 16 43.0	3,934
Sussex, 50 feet south of W. R. Brown's store, on 2-foot bank, at east edge of road; iron post stamped "Prim. Trav. Sta. No. 1, 1918"	36 54 52.9	77 16 46.4	3,284

JARRATT QUADRANGLE—Continued.

West along highways through north half of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Blue schoolhouse 200 feet south of road, road opposite	36	54	48.9	77	16	55.5	841
Road, opposite woven-wire wagon gate to large white house 300 feet south	36	55	02.0	77	17	24.6	2,709
T road to shanty, 200 feet north of	36	55	15.9	77	18	35.9	5,956
T road past whitewashed dwelling 500 feet north	36	55	18.3	77	19	03.5	2,256
Road, opposite sign "5 miles to W. T. Freeman Co."	36	55	24.1	77	20	04.4	4,979
Pipe culvert with concrete ends	36	55	21.3	77	20	49.3	3,656
Road, opposite sign "4 miles to W. T. Freeman Co."	36	55	16.9	77	21	07.6	1,549
Road fork northwest through woods	36	55	29.8	77	21	40.4	2,963
Crossroads, Waverly-Stony Creek and Petersburg-Emporia roads	36	55	41.4	77	22	24.3	3,755
Road, opposite sign "2 miles to W. T. Freeman Co."	36	55	57.8	77	23	00.3	3,364
T road, 950 feet west of, 120-foot steel bridge	36	56	01.9	77	23	23.6	1,935
Road, opposite sign "1 mile to W. T. Freeman Co."	36	56	35.5	77	23	17.8	3,429
Stony Creek, 210 feet east of Atlantic Coast Line R. R. crossing, 110 feet east of front door of Prince's store, at south edge of road; iron post stamped "Prim. Trav. Sta. No. 8, 1918"	36	56	44.3	77	24	03.6	3,818
Road, opposite sign "1 mile to W. T. Freeman Co."	36	56	27.0	77	25	00.4	4,932
T road to large, unpainted house, 800 feet north	36	56	28.4	77	26	03.3	5,114
150-foot wooden bridge, southwest corner of	36	56	41.0	77	26	14.8	1,580
Crossroads, 500 feet north of two-story white house	36	57	03.1	77	26	36.3	2,837
Road, opposite sign "4 miles to W. T. Freeman Co."	36	56	40.7	77	27	45.2	6,039
T road past two barns 300 feet north	36	56	37.8	77	28	28.0	3,483
Road fork southwest, mail box in gore	36	56	32.5	77	28	39.1	1,048
Diston, 40 feet from front door of Samuel Winfield's store; iron post stamped "Prim. Trav. Sta. No. 2, 1918"	36	56	39.1	77	29	53.8	6,104

North along Atlantic Coast Line R. R. and highways near west border of quadrangle.

East rail of south-bound track, opposite semaphore 575	36	45	09.3	77	29	28.8	.....
East rail of south-bound track, opposite milepost 57	36	45	43.7	77	28	51.4	4,619
East rail of south-bound track, opposite milepost 56	36	46	32.8	77	28	29.2	5,285
East rail of south-bound track, opposite milepost 55	36	47	24.1	77	28	15.4	5,308
East rail of south-bound track, opposite point of switch, at south end of Jarratt yard	36	48	11.9	77	28	11.0	4,850
Jarratt, 1,800 feet south of depot, on west side of Atlantic Coast Line tracks; iron post stamped "Prim. Trav. Sta. No. 7, 1918"	36	48	32.3	77	28	09.1	2,067
Jarratt, road crossing just south of depot, on south-bound track, joint in west rail	36	48	47.9	77	28	02.2	1,678
Center of road at wooden-box culvert	36	49	41.6	77	28	47.4	6,560
Road forks, wood road north, in center and 6 feet from point of gore	36	49	52.1	77	28	55.0	1,229
Bridge, 10 feet by 14 feet, no rails, center of	36	50	27.7	77	29	18.4	4,072
Steel bridge across river, at south end of, center line	36	50	51.0	77	29	36.8	2,789
T road east to negro shack, 200 feet	36	51	32.1	77	29	50.9	4,311
Wooden bridge with rails, 30 by 14 feet, at south end of, center line; white frame church 400 feet southeast	36	52	06.2	77	29	45.0	3,481
Forks, woods road northwest	36	52	40.4	77	29	26.0	3,787
Road fork to negro dwelling 400 feet west, opposite north point of, side of road	36	53	24.7	77	29	36.8	4,572
Road, opposite and 200 feet west of dilapidated dwelling of Jemino Hill	36	53	51 0	77	29	42.3	2,700
Road crossing	36	54	33.8	77	29	36.6	4,354
Road crossing at angle of 75°	36	55	20.5	77	29	52.8	4,896

East along Virginian Ry. from Jarratt to Gray. (By A. C. Schilling in 1918.)

Jarratt, Prim. Trav. Sta. No. 7 (Fales)	36	48	32.3	77	28	09.1	.....
Jarratt, crossing of Atlantic Coast Line and Virginian railroads, south and west rails	36	48	56.3	77	27	58.4	2,580
Road crossing	36	48	52.9	77	27	28.1	2,492
Road crossing	36	48	46.6	77	26	32.0	4,608
Milepost 71	36	48	36.9	77	25	05.3	7,116
Farm-road crossing	36	48	30.9	77	24	12.6	4,328
Brown's station, road crossing near	36	48	28.9	77	23	54.6	1,483
Farm-road crossing	36	48	15.9	77	22	46.4	5,695
Farm-road crossing	36	48	05.6	77	22	00.0	3,917
Gray, 20 feet east of county road and 27 feet south of south rail of main track; iron post stamped "Prim. Trav. Sta. No. 16, 1918"	36	47	47.3	77	20	39.0	6,845

JARRATT QUADRANGLE—Continued.

Northeast from Gray along Southern Ry.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	36	48	01.1	77	20	28.8	1,619
Farm-road crossing	36	48	30.8	77	20	14.4	3,223
Trestle 65 feet long, south end of	36	48	43.1	77	20	04.4	1,487
Hilda, 45 feet east of east rail and 64 feet south of southeast corner of depot; iron post stamped "Prim. Trav. Sta. No. 17, 1918"	36	49	12.7	77	19	45.9	3,352
Trestle, 92 feet long, south end of	36	49	43.6	77	19	17.5	3,886
Farm-road crossing	36	49	55.1	77	18	47.4	2,707
Farm-road crossing	36	50	03.6	77	18	25.0	2,013
Farm-road crossing	36	50	31.4	77	17	48.0	4,116
Yale, 19 feet northwest of northwest rail of Southern Ry., 18 feet northeast of county road, 42 feet southeast of south corner of Potridge store; iron post stamped Prim. Trav. Sta. No. 18	36	50	43.6	77	17	16.7	2,831
Trestle 30 feet long, south end of	36	51	05.8	77	16	25.6	4,722
Farm-road crossing	36	51	28.1	77	15	51.1	3,598
Secondary-road crossing	36	51	40.8	77	15	28.6	2,233

On highway from Sussex to Lumberton.

Center line of small bridge (distance from Prim. Trav. Sta. No. 1 at Sussex)	36	54	29.2	77	15	15.2	7,787

South along Atlantic Coast Line R. R. from Stony Creek to Jarratt.

Stony Creek, about 3,400 feet south of depot; point of switch	36	56	15.0	77	24	06.0	.....
Milepost 45	36	55	23.1	77	24	25.1	5,477
Milepost 46	36	54	34.0	77	24	47.8	5,296
County-road crossing	36	54	11.4	77	24	58.2	2,429
Road crossing	36	53	50.9	77	25	07.7	2,216
Bridge over Nottoway River, north end of	36	52	58.6	77	25	31.9	5,636
Concrete-arch bridge, north end of	36	52	39.4	77	25	40.9	2,074
Forty-Nine Mile siding (Owen Store), 42.5 feet east of east rail of northbound track of Atlantic Coast Line R. R., 13 feet north of center line of road from Jarratt to Dunning; iron post stamped "Prim. Trav. Sta. No. 19, 1918"	36	52	12.8	77	25	52.7	2,856
Old road crossing	36	51	44.4	77	26	06.4	3,078
Milepost 50	36	51	18.9	77	26	18.4	2,762
Farm-road crossing	36	50	47.3	77	26	33.0	3,410
Farm-road crossing	36	50	25.6	77	26	43.1	2,332
County-road crossing	36	49	57.7	77	26	57.2	3,049
Farm-road crossing	36	49	46.2	77	27	13.2	1,742
Farm-road crossing	36	49	32.1	77	27	35.8	2,324
Jarratt, crossing of Atlantic Coast Line and Virginian railroads	36	48	56.3	77	27	58.4	4,063

Southwest from Gray along Southern Ry.

Gray, Prim. Trav. Sta. No. 16	36	47	47.3	77	20	39.0	.....
Road crossing	36	47	23.5	77	21	19.9	4,105
Trestle over pipe culvert, center of	36	47	06.4	77	21	44.6	2,656
Trestle A. J. 7.9, center of	36	46	28.9	77	22	10.5	4,336
Trestle A. J. 7.2, east end of	36	46	08.2	77	22	44.9	3,491
Road crossing	36	45	34.6	77	23	05.2	3,777
Trestle, east end of	36	45	13.5	77	23	40.0	3,544

Magnetic declination for west border of quadrangle, 4° 20′ W.

Along Virginian Ry. east of Gray.

Joyner, on bank 27 feet southeast of center line of county road, 41 feet south of south rail of south track of Virginian Ry., 7 feet east of telephone pole; iron post stamped "Prim. Trav. Sta. No. 15"	36	45	46.3	77	15	07.0	.....
Sussex and Southampton county-line fence	36	46	47.8	77	16	09.9	5,112
Farm-road crossing	36	47	05.4	77	17	29.3	6,699
Farm-road crossing	36	47	24.1	77	18	53.1	7,069
Farm-road crossing	36	47	43.2	77	20	19.1	7,255
Gray, Prim. Trav. Sta. No. 16 (described elsewhere)	36	47	47.3	77	20	39.0	1,674

JARRATT QUADRANGLE—Continued.

Along Virginian Ry. west of Jarratt. (By J. C. Fales in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing, just south of Jarratt depot (previously described)	36 48 47.9	77 28 02.2	.....
Road crossing, at west edge of, joint in south rail of main line	36 49 01.5	77 28 45.4	3,779

Northeast along highways near southeast corner of quadrangle. (By H. J. Switzer in 1918.)

Bridge 69 feet long, south end of	36 45 01.1	77 18 41.7	.....
Culvert of galvanized iron pipe	36 45 01.9	77 18 00.9	3,321
Bridge 7 feet long, west end of	36 45 06.0	77 16 50.2	5,767
Junction of roads	36 45 16.9	77 15 51.9	4,864
Bridge 7 feet long, east end of	36 46 00.1	77 16 02.0	4,448
T road east, center of grass triangle at	36 46 19.9	77 15 58.4	2,023
Junction of roads, center of triangle at	36 46 39.6	77 16 06.3	2,091
Prim. Trav. Sta. No. 15, at Joyner (previously described)	36 46 46.3	77 15 07.0	4,867

Magnetic declination for southeast corner of quadrangle, 4° 30′ W.

Northwest along highways in northwest part of quadrangle. (By J. C. Fales in 1918.)

Crossroads (position previously given)	36 57 03.1	77 26 36.3	.....
Road fork, 800 feet south of unpainted farm building	36 57 30.8	77 26 59.1	3,359
T road west past whitewashed negro cabin 400 feet distant	36 57 41.7	77 27 08.2	1,320
T road, 150 feet north of whitewashed negro cabin, mail box marked Nos. 44 and 47, at northeast corner	36 57 59.7	77 27 17.5	1,976
T road west at home of Lucius Flower	36 58 20.5	77 28 15.0	5,113
T road east, 700 feet to white farm house, negro house 100 feet south of corner	36 58 48.2	77 28 36.8	3,310
Ornamental iron gate in picket fence at entrance to gray house of James Pegram	36 59 01.0	77 29 23.4	3,996
Flake, at crossroads near Tucker's store; iron post stamped "Prim. Trav. Sta. No. 3, 1918"	36 59 40.5	77 29 06.6	4,221

Magnetic declination for northwest part of quadrangle, 4° 10′ W.

KARA QUADRANGLE.

Along Seaboard Air Line Ry. near southeast corner of quadrangle. (By J. C. Fales in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Milepost 72, east rail opposite	36 45 44.5	78 00 47.2	.....
Farm crossing, at entrance to white house 200 feet west of track	36 45 26.4	78 02 15.9	7,448
Skelton depot, west rail under south edge of first overhead crossing south of	36 45 11.8	78 02 56.3	3,600

KILMARNOCK QUADRANGLE.

(By E. L. McNair in 1916.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Freeport, 1 mile northeast of, in pine woods, persimmon tree 10 feet northwest of center of road and 160 feet southwest of gate; copper nail in root, painted "U. S. B. M. 1"	37 32 53.5	76 29 36.5	.....
Intersection of roads, signboard with pointer to "Coach Point Ferry"	37 33 38.9	76 29 09.1	5,098

Magnetic declination for south half of west side of quadrangle, 5° 59′ W.

KING WILLIAM QUADRANGLE.

North along highways near east border of north half of quadrangle. (By E. L. McNair in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T road east	37	39	39.9	77	00	00.5	
Road forks	37	40	05.6	77	00	26.2	3,322
T road south, directly in front of old store at White's shop	37	40	47.4	77	00	20.2	4,267
U. S. Coast & Geodetic Survey magnetic station, on courthouse grounds at King William, in rear of jail; stone monument with tablet on top	37	41	17.1	77	00	46.1	3,650
King William courthouse, T road north	37	41	13.4	77	00	50.0	488
T road southwest at blacksmith shop	37	41	39.1	77	01	57.9	6,043
Road east	37	42	52.9	77	01	51.6	7,482

Magnetic declination for east border of quadrangle, 5° 35′ W.

Along highways in the northeast quarter of quadrangle.

Walkerton, center of draw span across Mattaponi River	37	43	22.6	77	01	33.0	
Center of bridge over outlet of mill pond	37	43	41.9	77	01	13.6	2,495
Road southeast	37	44	13.3	77	00	21.9	5,227

Magnetic declination for northeast quarter of quadrangle, 5° 50′ W.

East along highways near north border of quadrangle.

T road corners	37	44	47.1	77	13	25.7	
Enfield post office, 25 feet north and 35 feet west of crossroads at, 15 feet northwest of center of road, 2 feet from wire-fence line, about 100 feet from store and post office; iron post stamped "Prim. Trav. Sta. No. 31, 1916"	37	44	43.0	77	13	08.8	1,424
T road south	37	44	36.4	77	11	54.0	6,037
T road south, 5 feet north of mail box	37	44	31.7	77	10	52.7	4,951
T road west	37	43	29.9	77	09	49.7	8,044
Manquin post office and store, about 150 feet west of, 115 feet west of road going southwest to Pamunkey, 15 feet south of road, close to wire-fence line; iron post stamped "Prim. Trav. Sta. No. 32, 1916"	37	42	32.3	77	09	16.2	6,416
T road corners	37	42	47.5	77	08	44.4	2,979
T road north	37	42	14.5	77	07	11.6	8,164
Road forks, center of grass triangle at	37	43	20.0	77	06	50.0	6,843
Road forks	37	43	41.5	77	06	02.4	4,400
T road north	37	43	34.4	77	05	31.0	2,625
Rumford post office, T road at	37	43	28.8	77	05	23.0	858
T road north	37	43	17.0	77	04	58.9	2,270
T road south	37	43	06.8	77	04	29.0	2,619
Terry Bros. store, T road north at	37	43	02.5	77	03	49.9	3,168
Sye, on right bank of Mattaponi River, between Sycamore and Chinkapin Landing on a point on Mill Farm. On front of a barn and a back fence of George Clark, 4 meters back from high-water mark and about 1 meter above it, within 1 meter of top of bank, on level ground; cement block 8x8x20 inches, standing 1 inch above ground and carrying a brass plate with explanatory legend. Submark is the nozzle of a quart bottle 20 inches below surface. Reference marks: (1) Sycamore tree 20 inches in diameter protecting this land, distant 4.904 meters, 87° 49′ 12.0″ to right of line to station More; (2) southwest corner of George Clark's dwelling, distant 48.554 meters, 200° 57′ 13.0″ to right of line to station More; (3) northeast corner of George Clark's house, distant 8.040 meters, 263° 05′ 30.0″ to right of line to station More; (4) cement block back of cluster on top of bank, at edge of field, distant 19.874 meters, 347° 09′ 09.0″ to right of line to station More	37	44	03.88	77	03	06.61	7,113

Magnetic declination for north border of quadrangle, 5° 00′ W.

KING WILLIAM QUADRANGLE—Continued.

Along highways near west border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
NOTE.—The positions on this line have not been adjusted as the closing error of 3.24″ in longitude is excessive. It is thought that a mistake in measurement of a chain (300 feet) may have been made between the position of station 4219 at angle in road and that of station 4221 at T road south on the King William sheet. The positions as given for this area are based on the adjusted position of station 2981 at road forks.	°	′	″	°	′	″	*Feet.*
T road east, second class	37	41	50.8	77	14	42.6	.....
T road east to Dabney's bridge	37	41	07.1	77	14	42.9	4,414
Angle in road	37	40	55.2	77	14	08.8	.....
T road south	37	41	02.3	77	13	31.9	.....
Totopotomoy Creek, center of wooden bridge over	37	40	46.9	77	13	05.0	2,659
Pamunkey station, 700 feet southeast of, 25 feet north of T road corners, 4 feet east of corner fence post, 1.5 feet outside fence line; iron post stamped "Prim. Trav. Sta. No. 44, 1916"	37	39	48.2	77	11	42.7	8,889
Tie point only	37	38	39.29	77	12	03.84	7,173
	37	38	38.81	77	12	07.08	.....
Error			+.48			−3.24	.....

Along highways from center to west border of quadrangle.

Dike triangulation station, on right bank of Pamunkey River, on shore fringed by brush and trees, about 170 meters below U. S. station dikes, about 160 meters above old Montague Landing, 10.5 meters back from shore line, where brush line makes back from river cutting off grassy swamp, on center of high bridge about 7 inches above high water; marked by an iron pipe 3 inches in diameter and 3 feet long, filled with and set in cement, standing 8 inches above the cement, and bearing at top a brass cap with legend	37	37	20.07	77	06	16.04	.....
T road southwest and private road northeast	37	36	44.7	77	07	49.7	8,344
Granite post, 8 by 8 inches square, standing 2 feet above ground, on south bank of Matadequin Creek, 10 feet north of bridge, county-line stone between Hanover and New Kent counties	37	36	59.4	77	08	15.7	2,567
T road south	37	37	37.1	77	08	39.3	4,253
Road forks, about 30 feet north of small creek	37	38	09.9	77	09	57.9	7,141
Apperson's store, 50 feet west of, T road north	37	38	35.1	77	10	32.0	3,742
T road south	37	38	32.9	77	11	04.8	2,648
Road forks	37	38	31.6	77	11	44.0	3,158

South along highways near south half of west border of quadrangle.

Old Church post office, T road south at	37	38	40.3	77	13	17.2	5,645
Matadequin Creek, center of wooden bridge over	37	37	54.0	77	13	24.9	4,722
T road southwest	37	37	18.5	77	13	28.3	3,606
Creek crossing, small wooden bridge over	37	36	42.7	77	13	12.8	3,831
Old Church post office, 3.1 miles south of, 28 feet south and 10 feet east of crossroads, opposite house on southwest corner of crossroads, just inside field, 2 feet from corner fence post; iron post stamped "Prim. Trav. Sta. No. 45, 1916"	37	36	05.8	77	13	06.6	3,761
Alexander's store, T road east at	37	35	11.4	77	13	23.4	5,669
T road southwest	37	34	42.4	77	13	33.8	3,056
Crossroads, a cedar tree 15 feet east	37	33	59.2	77	13	33.0	4,371
Crossroads, second-class	37	33	16.9	77	12	52.0	5,406
Crossroads, main roads	37	32	57.6	77	12	30.6	2,597
Road forks	37	32	37.6	77	12	14.4	2,414
Dispatch flag station, Southern Ry. track, road crossing	37	31	52.1	77	11	53.8	4,897
Road forks, about 40 feet northeast of pine tree at point of triangle	37	31	26.6	77	10	56.4	.....
Road forks, road southeast	37	31	40.9	77	10	26.5	2,810

KING WILLIAM QUADRANGLE—Continued.

East along highways near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks	37 32 00.0	77 09 59.6	2,901
T road north to Quinton station	37 32 05.6	77 09 50.8	910
Crossroads	37 32 18.6	77 09 18.0	2,955
Road forks, road southwest	37 32 05.2	77 09 01.8	1,887
T road south	37 32 01.4	77 07 16.4	8,489
New Kent courthouse, 8.25 miles west of, 3.75 miles south of Tunstall, at Pattersons Store, 35 feet north and 10 feet west of crossroads, 4 feet west of corner fence post; iron post stamped "Prim. Trav. Sta. No. 47, 1916"	37 31 58.1	77 06 56.8	1,622
Road forks, second-class road southeast	37 31 55.4	77 06 23.2	2,714
Road forks, second-class road northeast	37 31 52.5	77 06 10.1	1,100
T road north	37 31 07.5	77 05 02.6	7,097
R. E. Richardson's store, T road east at	37 31 28.6	77 04 32.8	3,215
T road south	37 31 23.9	77 03 50.5	3,442
Couch's store, T road south at, a T road north 20 feet west	37 31 31.4	77 02 20.5	7,296
Road forks, second-class road northwest	37 31 37.6	77 01 45.4	2,899
Road north through gate and field to White House station on railroad	37 31 36.3	77 01 12.6	2,645
New Kent courthouse, 2 miles west of, 10 feet south and 20 feet west of crossroads, road leading south to Providence Forge and north to White House, 2.5 feet north of telephone pole; iron post stamped "Prim. Trav. Sta. No. 48, 1916"	37 31 23.9	77 00 32.5	3,463

Magnetic declination for center line of quadrangle (east and west), 4° 10′ W.; for west border, 4° 40′ W.

Along Richmond and Norfolk highway in southwest corner of quadrangle. (By E. L. MacNair in 1916.)

Road northwest	37 31 07.0	77 11 33.1	.....
Chickahominy River, center of concrete bridge over	37 30 51.7	77 12 26.3	4,551
T road south	37 30 37.0	77 12 39.4	1,824
Road forks, road west	37 30 42.0	77 13 53.3	5,977
Road forks, about 35 feet west and 10 feet south of Elko Road signboard, about 12 feet west of Lexington Hotel signboard; iron post stamped "Prim. Trav. Sta. No. 46, 1916"	37 30 29.2	77 14 33.0	3,448

Along highways in southeast corner of quadrangle. (By J. H. Wilson in 1916.)

T road south	37 30 05.0	77 02 13.0	.....
Lane south leading to large white house on hill	37 30 23.2	77 01 49.3	2,653
Crossroads	37 30 29.8	77 01 28.7	1,794
Second-class road south	37 30 49.7	77 00 42.0	4,268

Magnetic declination in south part of quadrangle, 5° 03′ W.

LAWRENCEVILLE QUADRANGLE.

South a long highways near southeast corner of quadrangle. (By J. C. Fales in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road to white house with green trimmings 300 feet east	36 49 03.2	77 45 10.2	.....
Steel bridge, east guard fence at approach to, south end of	36 48 42.1	77 45 36.2	3,005
T road west	36 48 25.8	77 45 53.6	2,172
T road east	36 48 00.4	77 46 05.2	2,735
Concrete culvert with parapet and wing walls, north end of	36 47 09.8	77 46 31.9	5,557
Edgerton, third crossing west of depot, in center of joint in north rail (1,981 feet from Prim. Trav. Sta. No. 13)	36 46 43.3	77 46 42.3	2,811
T road to Powellton	36 46 11.8	77 47 28.2	4,908
T road to unpainted two-story house 100 feet west	36 45 23.2	77 47 05.7	5,237

LAWRENCEVILLE QUADRANGLE—Continued.

Along Southern Ry. east from Edgerton.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Edgerton, 100 feet west of depot, on north edge of cut; iron post stamped "Prim. Trav. Sta. No. 13, 1918"	36	46	41.1	77	46	18.1	.....
Milepost 88, south rail opposite	36	46	21.4	77	45	14.3	5,562

Magnetic declination for southeast part of quadrangle, 4° 10′ W.

Along Southern Ry. west from Edgerton. (By J. C. Fales in 1918.)

Edgerton, third road crossing west of depot, in center of, joint in north rail	36	46	43.3	77	46	42.3	.....
Crossing of Emporia-Lawrenceville road, south rail at	36	46	50.8	77	47	41.0	4,883
Milepost 91, south rail opposite	36	46	49.8	77	48	21.5	3,293
Road crossing, 200 feet west of "Yard Limit" sign, at west edge of road, joint in south rail	36	45	59.9	77	49	25.4	7,247
Overhead bridge at east end of side track, south rail at	36	45	23.7	77	50	51.0	7,875
Lawrenceville, at crossing sign, 60 feet east of freight house; iron post stamped "Prim. Trav. Sta. No. 16, 1918"	36	45	22.9	77	51	03.3	1,007
Milepost 95, south rail opposite	36	45	36.3	77	51	54.6	4,387
Milepost 96, south rail opposite	36	45	39.8	77	52	59.4	5,284
Farm crossing	36	46	02.2	77	53	42.0	4,141
Overhead highway bridge, under west edge of, south rail	36	46	01.3	77	54	25.8	3,558
Charlie Hope, overhead highway bridge at, south rail under west edge of	36	45	24.1	77	55	25.6	6,159

Southwest along Seaboard Air Line Ry. through center of quadrangle.

Nottoway River, steel truss across, east rail at south end of	36	57	22.5	77	45	03.3	.....
Milepost 51, east rail opposite	36	57	13.6	77	45	32.0	2,498
Rawlings, west rail at road crossing, at	36	56	54.1	77	45	44.5	6,209
Timber trestle 180 feet long, east rail at south end of	36	56	29.4	77	47	49.5	5,836
Farm-road crossing, second joint in east rail south of, 338 feet south of milepost 54	36	56	07.2	77	48	21.8	3,451
Kress depot, opposite waiting room door, east rail	36	55	42.9	77	48	48.1	3,257
West switch point at turnout to F. J. Kress Box Co.'s mill	36	55	25.4	77	49	01.8	2,085
Farm crossing, west rail at	36	54	32.9	77	49	14.0	5,401
Warfield depot, opposite colored waiting-room door at west rail of house track	36	53	43.5	77	49	36.6	5,326
Farm crossing, fifth joint in east rail east of, 2,000 feet south of trestle	36	52	41.7	77	50	37.9	7,988
Farm crossing, east rail at	36	52	31.9	77	51	34.4	4,698
Alberta, 900 feet west of depot, 15 feet south of main line of Virginian Ry.; iron post stamped "Prim. Trav. Sta. No. 20, 1918"	36	51	53.8	77	53	08.6	8,573
Alberta, overhead girder bridge for Virginian Ry. crossing, under north edge of, west rail of Seaboard Air Line Ry	36	51	50.5	77	53	01.8	650
Farm crossing, east rail at	36	51	13.4	77	53	49.5	5,399
National Highway crossing, east rail at	36	50	33.5	77	54	20.3	4,752
Cochran depot, opposite spout of water tank, east rail of main line	36	49	57.7	77	54	40.0	3,953
Farm crossing, first joint in west rail south of	36	49	43.9	77	55	22.6	3,740
Overhead road crossing, east rail at north edge of	36	49	03.1	77	56	08.4	5,557
Overhead road crossing, center line of track at north edge of	36	47	56.9	77	57	08.2	8,270
Grandy depot, about 600 feet southwest of, opposite milepost 68	36	47	46.7	77	57	45.4	3,195
Overhead road crossing, west rail under north edge of	36	47	05.2	77	58	04.3	4,474
National Highway crossing, 1,830 feet east of milepost 70, 16 feet south of track; iron post stamped "Prim. Trav. Sta. No. 23, 1918"	36	46	42.2	77	58	45.0	4,048
300-foot trestle, west rail at north end of	36	46	29.1	77	59	14.2	2,719
Milepost 71, center of track opposite	36	46	05.8	77	59	56.5	4,166

West along Virginian Ry. through center of quadrangle.

Milepost 90, south rail opposite	36	50	01.5	77	45	15.1	.....
Dolphin, at east end of side track, point of switch	36	49	57.6	77	46	27.5	5,897
Dolphin depot, opposite waiting-room door, joint in north rail of main track	36	49	45.9	77	47	18.9	4,341
Milepost 93, north rail opposite	36	49	55.3	77	48	23.7	5,345
Large concrete-arch culvert, north rail over	36	50	01.5	77	49	00.5	3,060
Milepost 94, center of track opposite	36	50	11.3	77	49	25.1	2,223
Road crossing, unpainted store 75 feet north	36	50	44.4	77	50	23.3	5,796
Milepost 96, south rail opposite	36	51	11.5	77	51	11.2	4,760

LAWRENCEVILLE QUADRANGLE—Continued.

West along Virginian Ry. through center of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
County-road crossing, south rail at center line of	36	51	27.5	77	51	39.4	2,801
Road crossing, south rail at	36	51	47.8	77	52	20.6	3,924
Alberta, Prim. Trav. Sta. No. 20 (previously described)	36	51	53.8	77	53	08.6	3,944
(By J. C. Faleš in 1918.)							
Alberta, Prim. Trav. Sta. No. 20 (previously described)	36	51	53.8	77	53	08.6	.....
Milepost 99, north rail opposite	36	52	08.1	77	54	08.7	5,096
Road crossing	36	52	31.8	77	55	05.2	5,175
Second-class road crossing, south rail	36	53	18.7	77	56	06.1	6,829
Overhead road crossing, center of	36	53	57.4	77	56	58.2	5,794
Overhead road crossing, north end of	36	54	11.0	77	57	56.2	4,907
North along highways near west border of quadrangle.							
Danieltown, at southeast corner of crossroads, at store and post office; iron post stamped "Prim. Trav. Sta. No. 21, 1918"	36	54	16.0	77	57	31.9	2,031
Road fork, northeast toward sawmill	36	54	49.7	77	57	42.6	3,515
Bridge, wooden, 14 by 20 feet, south end of	36	55	17.4	77	58	08.3	3,489
Road forks, middle of south leg of Y	36	55	50.8	77	58	05.8	3,378
Crossroads at Barrow's store, north point of Y at	36	56	06.3	77	58	44.7	3,530
Road fork east toward house of E. McDaniel	36	56	47.1	77	58	46.0	4,126
T road west	36	57	14.8	77	58	24.2	3,319
T road east	36	57	55.4	77	57	59.7	4,559
Jonesboro, opposite, 35 feet east of two-story building formerly store and post office	36	58	43.5	77	57	41.8	5,079
Nottoway River, southeast corner of bridge across, known as "Kennedy's Bridge"	36	59	21.3	77	57	47.2	3,845
Crossroads near John Maddox's farm, at southwest corner of road intersection; iron post stamped "Prim. Trav. Sta. No. 22, 1918"	36	59	58.1	77	57	57.3	3,819
East along highways near north border of quadrangle.							
Road fork south	36	59	56.0	77	57	24.1	2,706
Road fork to unpainted house, 300 feet east of main road	36	59	56.6	77	52	09.7	.....
Nottoway River, wooden bridge across known as Gill's Bridge, north end of	36	59	46.2	77	50	28.6	.....
T road west	36	59	04.3	77	50	21.8	4,274
T road, at northeast corner of; iron post stamped "Prim. Trav. Sta. No. 25, 1918"	36	58	25.0	77	50	19.8	3,974
Point opposite and 15 feet east of center of back wall of residence of J. R. Howerton	36	57	42.5	77	50	01.7	4,538
Zero, road T at T. E. Howerton's store	36	57	25.1	77	49	33.5	2,891
Road T, point opposite and 105 feet west of front door of large white frame church	36	57	25.2	77	47	56.1	7,906
Rawlings, railroad crossing at, on west rail	36	56	54.1	77	46	44.5	6,601
North along highways from Grandy to Tobacco near west border of quadrangle.							
Grandy depot	36	47	50.8	77	57	41.1	.....
Road fork northeast to unpainted negro house 150 feet east of road	36	49	02.4	77	57	37.6	7,248
T road east	36	49	46.4	77	57	24.5	4,587
T at junction of road from Grandy with road from Danieltown to Fairview, east point of triangle at	36	50	29.3	77	57	20.8	4,350
Road fork to unpainted two-story house 800 feet west	36	51	06.7	77	56	58.9	4,177
Bridge, wooden, 16 by 40 feet, east end of	36	51	18.5	77	56	46.9	1,546
T road southeast	36	51	43.1	77	56	25.6	3,028
T road west	36	52	36.9	77	56	31.7	5,467
Second-class road crossing, south rail (previously listed)	36	53	18.3	77	56	06.1	4,677

Magnetic declination for north border of quadrangle, 4° 17′ W.; for west border of quadrangle, 3° 51′ W.

McKENNEY QUADRANGLE.

West along Virginian Ry. through south half of quadrangle. (By J. C. Fales in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost 76, south rail opposite	36	49	12.9	77	30	26.8	.....
Milepost 77, south rail opposite	36	49	26.6	77	31	29.2	5,260
Milepost 78, 75 feet east of, 30 feet north of track; iron post stamped "Prim. Trav. Sta. No. 9, 1918"	36	49	34.9	77	32	31.7	5,150
Milepost 79, south rail opposite	36	49	18.3	77	33	33.9	5,330
Milepost 80	36	49	11.3	77	34	36.6	5,150
Purdy depot, opposite door of white waiting room, south rail	36	49	24.8	77	35	19.4	3,743
Milepost 82, north rail opposite	36	49	29.5	77	36	41.0	6,644
Milepost 83, south rail opposite	36	49	34.8	77	37	45.3	5,264
Road crossing at short spur track, south rail at	36	49	44.9	77	38	55.4	5,788
Callaville post office, overhead bridge, south rail at center line of	36	49	43.9	77	40	06.3	5,765
Farm crossing, 400 feet west of milepost 86, south rail at	36	49	35.3	77	41	02.0	4,616
Adsit depot, opposite door of white waiting room, south rail	36	49	38.6	77	42	03.0	4,966
Milepost 88, south rail opposite	36	49	46.1	77	43	05.2	5,116
Smoky Ordinary, approximately opposite north face of post office, at west edge of road, 220 feet north of overhead bridge across Virginian Ry., near milepost 89; iron post stamped "Prim. Trav. Sta. No. 10, 1918"	36	49	55.4	77	44	02.1	4,724

West along Southern Ry. near south border of quadrangle.

Milepost 82, north rail opposite	36	45	25.2	77	39	47.4	.....
Milepost 83, south rail opposite	36	45	31.0	77	40	51.6	5,254
Road crossing	36	45	13.0	77	41	40.0	4,341
Trestle, 150 feet pile bent, at east end of, south rail	36	45	08.6	77	42	21.6	3,411
Milepost 87, north rail opposite	36	45	36.2	77	44	41.8	.....
Road crossing of Emporia-Lawrenceville road	36	45	58.7	77	44	57.3	2,594

Along highways near east border of quadrangle.

Road fork 0.25 mile southwest of Diston	36	56	28.5	77	30	08.4	.....
T road west	36	55	53.8	77	30	01.2	3,559

West along highways through north half of quadrangle. (By J. C. Fales in 1918.)

Road fork, 0.25 mile southwest of Diston	36	56	28.5	77	30	08.4	.....
Matabelum's place, west barn at, road opposite west face of	36	56	23.5	77	31	04.5	4,595
Truitt, 0.75 mile east of, fork west	36	55	57.9	77	32	10.1	5,918
Truitt, county road, 85 feet north of north face of M. L. Rose's store at	36	56	07.0	77	33	00.7	4,213
North side of road, opposite and 100 feet south of negro cabin	36	56	13.2	77	33	37.4	3,046
Intersection of roads at angle of 50°	36	55	58.0	77	33	52.3	1,947
T road west	36	55	38.2	77	34	08.8	2,411
Two-story house with exterior chimney 100 feet north of road, road opposite	36	55	33.3	77	35	05.3	4,617
Unpainted negro house belonging to James Abernathy, road opposite and 35 feet north of	36	55	42.7	77	35	45.1	3,372
Unused log barn, road opposite and 50 feet north of	36	55	46.9	77	36	41.1	4,565
Crossroads 75 feet south of church	36	55	44.8	77	37	05.8	2,017
Woodmen's Hall, 50 feet south of south line of, point in "Stage" road	36	56	11.2	77	37	24.9	3,086
30-foot I-beam bridge with pipe railings, east end of, at center line	36	55	32.8	77	38	18.7	5,846
Road fork northwest, at Hartwell house	36	55	19.9	77	39	16.2	4,854
Unpainted storehouse on south side of road, road opposite	36	54	53.1	77	39	46.8	3,666
Clark's store, opposite and 40 feet west of front door of	36	54	44.4	77	40	05.3	1,746
Old log tobacco barn 400 feet west of road, road opposite	36	55	36.3	77	40	24.7	5,482
Log stable 200 feet east of road, road opposite southwest corner of	36	55	55.6	77	40	33.0	2,064
Crossroads, 500 feet east of tobacco warehouse	36	56	49.7	77	40	54.6	5,751
Picket wagon gate to white house 400 feet west, road opposite	36	57	32.6	77	41	23.1	4,915
Crossroad from schoolhouse, 300 feet east to white dwelling, 700 feet west of	36	58	01.4	77	41	56.7	3,988
Crossroad known as "Pony Road"	36	58	14.0	77	42	07.6	1,550
McKenney, 0.5 mile east of depot on Seaboard Air Line Ry., 300 feet west of intersection of Bolling Road with center line of Boydtown Plank Road; iron post stamped "Prim. Trav. Sta. No. 11, 1918"	36	58	57.6	77	43	01.0	6,181

McKENNEY QUADRANGLE—Continued.

Along Seaboard Air Line Ry. northeast from McKenney.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
McKenney, on east rail of main track of Seaboard Air Line Ry., at second joint north of north face of depot	36	59	18.4	77	43	21.5	2,683
Milepost 46, east rail opposite	36	59	58.2	77	42	09.2	7,106
North along highways near west border of quadrangle.							
Smoky Ordinary, Prim. Trav. Sta. No. 10 (previously described)	36	49	55.4	77	44	02.1	.....
Road fork at 30° angle, point of gore	36	50	34.2	77	43	30.1	4,707
Sign reading "Lawrenceville 11 miles," road opposite	36	51	19.2	77	43	46.8	4,754
T road to unpainted house 700 feet east of road junction	36	52	00.1	77	44	08.2	4,485
Timber bridge 150 feet long, south end of	36	52	11.2	77	44	15.0	1,253
Concrete bridge, south end of	36	53	18.8	77	44	16.0	6,836
T road to white bungalow 500 feet west	36	53	42.8	77	44	09.6	2,484
Plank bridge across road ditch, at entrance to log cabin, road opposite	36	54	02.0	77	44	05.0	1,984
I-beam girder bridge 90 feet long, with pipe railing, north end of	36	55	08.4	77	44	10.3	6,726
Woods road east through barred gate, road opposite	36	55	39.4	77	44	11.2	3,144
Nottoway River, steel bridge across, south end of	36	56	41.2	77	43	59.6	6,317
Unpainted barn 10 feet east of road, east edge of road opposite north face of	36	57	13.4	77	43	42.9	3,532
Woven-wire gate, at entrance to white house 600 feet west, road opposite	36	58	08.9	77	43	40.8	5,618
McKenney, Prim. Trav. Sta. No. 11 (previously described)	36	58	57.6	77	43	01.0	5,894

Magnetic declination for north half of quadrangle, 4° 10′ W.; for west border of quadrangle, 4° 20′ W.

Along Seaboard Air Line Ry. near west border of quadrangle. (By J. C. Fales in 1918.)

Overhead road crossing, west rail at north edge of (8,431 feet from position at McKenney station)	36	58	20.6	77	44	36.2	.....

MONTROSS QUADRANGLE.

Along highways near southeast corner of quadrangle. (By E. L. McNair in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Private road south through gate	38	00	26.8	76	45	07.7	(4,721)
Center of road at ford across small creek	38	00	32.6	76	45	35.8	2,325
Road, second class, southeast	38	00	50.1	76	46	02.9	2,799
Center of wooden bridge over small creek	38	00	03.0	76	46	24.4	5,059
Along highways near south border of quadrangle (east half).							
Crossroads, second class, 15 feet east of old gate	38	00	09.3	76	49	31.7	(8,117)
Road west through field, 40 feet north of entrance to farmhouse	38	00	55.2	76	50	04.3	5,328
Havelock post office and store, 30 feet northeast of, 15 feet northwest of center of road, in line with road southeasterly to Ethel, 1.5 feet from northeast corner of old store building; iron post stamped "Prim. Trav. Sta. No. 20, 1916"	38	01	14.4	76	50	20.2	2,321
Fork of road, center of triangle at	38	00	57.9	76	50	48.0	2,786
T road	38	00	08.7	76	50	55.7	5,014

Magnetic declination along border near southeast corner of quadrangle, 6° 10′ W.

MORATTICO QUADRANGLE.

North along highways near east border of quadrangle. (By E. L. McNair in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Private roadway east to dwelling house	37	48	19.2	76	30	21.4	3,395
Alfonso post office, about 40 feet west of, T road corners at, 15 feet west of well, on root of white-oak tree 2.5 feet in diameter; copper nail and washer, tree painted "U. S. B. M. 8"	37	48	32.6	76	30	30.4	1,542
T road northwesterly	37	49	05.9	76	30	33.1	3,371
T road west, another road turns east 25 feet farther north	37	49	24.6	76	30	24.0	2,031
Road east through woods	37	49	59.3	76	30	29.4	3,537
T road west	37	50	32.8	76	30	33.8	3,410
T road corners, 100 feet west of Lara store and post office	37	51	10.0	76	31	03.4	4,447
Forks of road	37	51	43.3	76	30	33.8	4,118
Forks of road, 70 feet northwest of signboard marked "Heathsville, Lara, Miskimon"	37	51	55.7	76	30	16.3	1,880
Heathsville, 3½ miles (by road) northwest of, 8 feet west of road Heathsville to Lara, 540 feet south of Gulick's corners, opposite house on east side of road, in line with east-west fence and south of lane going west to house; iron post stamped "Prim. Trav. Sta. No. 11, 1916"	37	53	27.6	76	30	04.3	(1,719)

Magnetic declination for east border of quadrangle, 5° 38′ W.

Along highways in southeast corner of quadrangle. (Checked spur line.)

Lively post office, crossroads at	37	46	39.7	76	30	50.0	(5,060)
Crossroads, second class	37	46	16.9	76	31	14.0	3,012
Road forks, second-class road southwest	37	45	47.3	76	31	42.4	3,755
Beanes Mill, center of road over mill race	37	45	32.7	76	32	10.8	2,722
Bethel M. E. Church South, center of road in front of	37	45	08.5	76	32	32.9	3,024

Magnetic declination in southeast corner of quadrangle, 5° 40′ W.

Northwest along highways near northeast corner of quadrangle.

Crossroads, just north of road forks	37	56	08.0	76	30	15.2	(2,613)
A. L. Clark's mill, center of road over mill race	37	56	48.7	76	30	25.8	4,203
T road corners	37	56	52.9	76	31	00.7	2,828
Lottsburg, 20 feet east and 10 feet north of, at T road west, at north end of private hedge; iron post stamped "Prim. Trav. Sta. No. 13, 1916"	37	57	26.9	76	31	05.7	3,455
Road forks near church	37	57	50.3	76	31	13.4	2,453
T road northeast	37	58	07.2	76	31	43.3	2,942
Headley's mill, at crossing of mill race, center of road	37	58	10.3	76	32	31.4	3,863
Callao, 10 feet south and 40 feet east of crossroads at, 18 feet east of center of road, 3 feet from telephone pole; iron post stamped "Prim. Trav. Sta. No. 14, 1916"	37	58	10.3	76	33	35.8	5,154
Ford across small creek	37	58	31.5	76	34	21.5	4,249
Road south	37	58	31.8	76	34	44.5	1,843
Hyacinth post office, road forks, 100 feet south of	37	59	24.9	76	35	23.9	6,227
T road corners	38	00	00.1	76	34	57.8	4,129

Along highways near northwest corner of quadrangle.

Private roads at bend in main road	37	59	46.7	76	40	49.2	(6,025)
T road corners, at road south	37	59	36.6	76	41	12.5	2,129
Road south	37	59	33.4	76	41	56.7	3,558
Road north, second class	37	59	42.9	76	42	43.1	3,830
Lyells post office and store, T road east at	37	59	50.3	76	43	43.6	4,877

Along highways near west border of quadrangle.

Second-class road west	37	59	16.5	76	43	56.0	(3,562)
T road east	37	58	40.0	76	44	19.1	4,136
T road east	37	57	02.2	76	44	57.6	(3,680)
Road forks, road south to Wellfords wharf and southeast to Emmerton (junction station)	37	56	26.2	76	44	48.2	3,709

MORATTICO QUADRANGLE—Continued.

Checked spur line along highways near west border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road west	37 55 20.8	76 45 00.2	6,692
Road east	37 54 56.9	76 44 53.7	2,470
Road south, second class	37 54 36.5	76 44 51.5	2,078

Along highways west to east through center of quadrangle.

Center of bridge over Totuskey Creek	37 55 24.5	76 43 15.5	(9,702)
Center of road opposite gate, entrance to farmhouse on north side of road	37 55 01.0	76 42 01.8	6,374
Road northeast	37 54 25.4	76 41 07.1	5,674
Road west	37 54 03.6	76 40 57.8	2,325
T road north at Emmerton	37 53 56.4	76 40 47.9	1,075
Road forks	37 53 27.8	76 40 15.2	3,906
Fork of roads near church, road southeast	37 53 22.9	76 39 57.2	1,520
Farnham post office, 0.8 mile west of, at corner where road goes west to Sharps, 15 feet south of Emmerton-Farnham road and 20 feet east of road to Sharps, 20 feet from corner fence post; iron post stamped "Prim. Trav. Sta. No. 18, 1916"	37 53 27.7	76 38 17.2	8,040
Farnham post office, 350 feet west of, T road north	37 53 09.6	76 37 33.3	3,964
T road north	37 52 59.6	76 36 24.6	5,601
Road north	37 52 47.3	76 35 41.2	3,697
T road south	37 52 38.1	76 35 13.5	2,404
Private road to house	37 52 00.9	76 34 28.7	5,200
Farnham, 3⅜ miles southeast of, 12 feet southeast of center of road, in root of pine tree; copper nail and washer, painted "U. S. B. M. 11"	37 51 49.0	76 34 02.6	2,410
Center of Lara-Farnham road, in line with road south	37 51 46.4	76 33 52.5	862
Road forks, center of grass triangle at	37 52 10.9	76 33 21.5	3,511
Road forks, road north about 100 feet east of road south	37 52 08.2	76 33 00.8	1,686
Road forks, about 0.6 mile north of camp grounds	37 53 05.6	76 32 28.6	6,349
Crossroads, second-class road west through woods	37 53 31.5	76 32 33.0	2,646
T road corners, road east	37 54 08.5	76 32 41.0	3,794
Road forks, 15 feet east of signboard	37 53 50.6	76 31 49.2	4,527
Road forks, 30 feet southeast of signboard	37 54 03.7	76 31 07.9	3,564
Prim. Trav. Sta. No. 11	37 53 27.6	76 30 04.3	6,278

Magnetic declination near northeast corner of quadrangle, 5° 45′ W.; near northwest corner of quadrangle, 5° 54′ W.; near west border of quadrangle, 6° 10′ W.; west to east through center of quadrangle, 5° 40′ W.

Along highways across extreme southwest corner of quadrangle.

Montague post office, T road north at store	37 46 05.1	76 44 14.3	(4,021)
Laneview post office and store, 90 feet south of, 50 feet south and 40 feet east of crossroads near store, at fence line, 15 feet southeast of end of tile road drain; iron post stamped "Prim. Trav. Sta. No. 22, 1916" (this post is said to be exactly on line between Essex and Middlesex counties)	37 45 25.9	76 43 22.4	5,759

Along highways near south border of quadrangle.

T road northwest, second class	37 46 16.6	76 41 39.7	9,711
Butylo post office, at crossing of Middlesex and Essex county line, center of road	37 46 09.3	76 41 12.8	2,280
Temporary bench mark No. 13, at Bay Port, 100 feet south of store and post office, 20 feet west of road, at edge of timber; copper nail in root of gum tree, painted "U. S. B. M. No. 13"	37 45 15.3	76 40 26.9	6,585
Center of bridge	37 45 02.7	76 40 17.7	1,469

Magnetic declination for extreme southwest corner of quadrangle, 5° 40′ W.; magnetic declination near south border of quadrangle, 5° 35′ W.

MOYOCK QUADRANGLE.

South along Norfolk Southern R. R. near northwest corner of quadrangle. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	36	44	56.8	76	13	50.1	
Butts, road crossing at	36	44	35.6	76	13	26.9	2,862
Tree, east of fork in road	36	44	45.2	76	12	52.7	2,950
Intersection of farm road west, 20 feet southwest of corner of fence	36	44	59.1	76	12	33.5	2,098

NEW KENT QUADRANGLE.

Near Dudley's ferry. (By. E. L. McNair in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Dudley's ferry, Brooks's residence at, in west wall between two chimneys; bronze tablet stamped "Prim. Trav. Sta. No. 349"	37	31	47.7	76	46	49.4	
Dudley's ferry, 0.5 mile east of forks, 25 feet west and 10 feet north to signpost marked "To bridge"	37	31	53.4	76	46	20.9	2,381
Triangulation station Mat, on east side of Mattaponi River, about 1,800 meters northeast of West Point, on "Shell Point," on land of Mr. George, on southwest end of old field forming a point of high ground between river and grassy bight 30 meters wide and 60 meters long, 13 meters back from high-water line and 8 feet above it; cement block 8 by 8 by 24 inches with legend and triangle. Reference marks: (1) Head of spike in lone cedar tree, 9-in. in diameter, near foot of slope between station and river, distance 7.472 meters, 115° 33′ 18.3″ to right of line to station Brooks; (2) cement block at edge of brush, 1 foot northwest from fence on south side of farm road, distance 45.321 meters, 247° 58′ 23.3″ to right of line to station Brooks	37	32	28.8	76	46	48.4	4,202
Old chain ferry, near	37	32	49.8	76	46	36.0	2,376
White-oak tree at angle in road; copper nail in root painted "U. S. B. M. 3"	37	33	53.5	76	45	36.0	8,008
Elsom post office, 700 feet south of, T road corner	37	34	11.7	76	45	10.7	2,740

Magnetic declination for south half of east side of quadrangle, 5° 24′ W.

Near east border of quadrangle.

Road forks, about 600 feet southeast of Wares Church	37	40	49.1	76	45	04.5	(7,160)

Along highways near west border of quadrangle.

Manor triangulation station	37	34	58.11	76	59	27.55	
Road crossing at Lester Manor station, on Southern Ry	37	35	05.8	76	59	27.9	784
Road forks, road northwest to Idaho	37	35	41.6	76	59	36.6	3,685
Crossroads at Lanesville	37	36	52.7	76	58	43.4	8,369
Lanesville, ⅔ mile north of, at forks of road at Brooks blacksmith shop, in line of roads in three directions, 3 feet north of telephone pole; iron post stamped "Prim. Trav. Sta. No. 23, 1916"	37	37	25.8	76	58	36.6	3,395
Road west to sawmills	37	38	01.0	76	58	58.4	3,968
Temporary bench mark No. 17, 2.85 miles north of Lanesville, on Walkerton road, at edge of woods, 10 feet south of road, in root of white-oak tree; copper nail marked "U. S. B. M. 17"	37	38	51.6	76	59	50.7	6,627

Magnetic declination near east border of quadrangle, 5° 35′ W.; near west border of quadrangle, 5° 35′ W.

NEW KENT QUADRANGLE—Continued.

East along highways near north border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T road northwest	37	44	45.3	76	59	54.0	
Center of bridge over creek	37	44	48.7	76	58	09.0	
Forks of road, about 400 feet south of Favor post office	37	44	43.5	76	57	28.9	3,260
Center of bridge over small creek	37	44	26.7	76	56	58.3	2,987
T road corners at Brown's store	37	43	57.5	76	55	21.4	8,325
Stevensville, crossroads at	37	43	39.7	76	55	12.6	1,940
Road forks	37	43	38.4	76	53	12.6	9,641
Cumnor post office and store, 100 feet southeast of, on southeast side of road, 2 feet from fence line, in line of road northwest; iron post stamped "Prim. Trav. Sta. No. 25, 1916"	37	43	29.5	76	52	59.6	1,375
Forks of road, about where wagon tracks part	37	43	55.4	76	51	48.4	6,288
Road north, second class	37	44	16.8	76	51	22.6	2,995
Forks of road, 100 feet south of brick church	37	44	55.1	76	50	43.7	4,975

Magnetic declination for northwest quarter of quadrangle, 5° 50′ W.

East along highways near south border of quadrangle.

Road forks, second-class road south	37	30	53.3	76	59	29.6	
New Kent courthouse, 200 feet northeast of church at, forks of road	37	30	57.7	76	58	54.0	2,907
New Kent courthouse grounds, U. S. Coast and Geodetic Survey north meridian mark; stone post 6 by 8 inches, standing 2 feet above ground, has been graded around; tower of courthouse is 52 feet distant, bearing S. 15° 30′ E	37	31	04.4	76	58	43.3	1,100
T road north	37	31	03.4	76	58	22.6	1,670
Crossroads	37	31	02.0	76	58	04.6	1,455
Road forks	37	30	59.4	76	57	56.8	684
T road southwest, in triangle formed by roads, 3 feet northeast of large oak tree	37	30	34.8	76	57	20.3	3,857
T road north	37	30	10.4	76	55	55.1	
Private road south to house	37	30	23.0	76	54	38.7	
T road south	37	30	25.4	76	54	31.0	673
Road forks, point is at parting of wagon tracks	37	30	08.5	76	54	02.7	2,853
Road forks	37	30	09.0	76	53	31.5	2,512
T road south in woods, about 20 feet east of road north	37	30	02.3	76	53	03.5	2,357
Road forks, 400 feet southeast of church	37	30	07.0	76	52	28.4	2,875
T road south	37	30	01.4	76	52	14.8	1,235
Road forks	37	30	03.5	76	49	55.4	
Bridge over small creek	37	30	03.3	76	49	40.7	1,192
Road forks, about 60 feet south of where wagon tracks meet	37	30	11.3	76	49	20.2	1,835
Road forks	37	30	23.0	76	49	19.6	1,193
T road, second class, a little east of south	37	31	00.1	76	48	50.4	4,421
Brick House (2) triangulation station, on most promising point of ground on west side of York River southeast of West Point. On each side of this point, which is 70 meters wide, a prong of marsh extends into the land. Station is 15 meters back from top of river bank and 30 meters from high-water line and about 8 feet above it, on center point of high ground of old field; cement block 8 by 8 by 24 inches with legend and triangle on brass cap cast in the top. Reference mark: Cement block with brass cap and arrow. Block is 8 by 8 by 24 inches and projects 1 inch above surface of ground, distant 50.203 meters, 213° 46′ 54.3″ to right of station Pam	37	30	46.00	76	48	17.98	2,976

Magnetic declination along south border of quadrangle, 5° 00′ W.

Along highways diagonally through the northeast quarter of quadrangle.

Creek, center of bridge over	37	44	24.4	76	47	46.1	
Road forks, at parting of wagon tracks	37	44	05.5	76	47	56.8	2,090
T road forks, second-class road south	37	43	46.5	76	47	29.5	2,918
Small creek, ford of	37	43	29.2	76	47	00.1	2,939
Crossroads, second-class roads east and west	37	43	13.9	76	46	51.2	1,703
Road forks, road south	37	42	47.8	76	46	52.1	2,643
T road east, 30 feet north of a T road west	37	42	31.3	76	47	03.4	1,893
T road northeast, 1,400 feet north of Dragonville	37	42	03.2	76	46	50.8	3,015
Road forks, road southwest	37	41	30.1	76	46	29.4	3,769
Road forks, road south	37	41	04.6	76	45	38.1	4,862
Forks of road, 600 feet southeast of Wares Church	37	40	49.14	76	45	04.52	3,127

NEW KENT QUADRANGLE—Continued.

West along highways through center of east half of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks, at west end of triangle formed by roads, in line with road southwest to Little Plymouth and road north to Coldwater	37	39	16.34	76	44	04.48	
Road forks, second-class roads north and northwest	37	38	50.2	76	45	08.5	5,784
Crossroads, about 200 feet north of small house	37	38	29.2	76	45	24.8	2,496
Temporary bench mark No. 19, on south side of road, near edge of swamp where an old road goes south; copper nail driven in side of gum tree, painted "U. S. B. M. 19"	37	38	06.7	76	46	44.9	6,828
Road forks, road north	37	38	13.8	76	46	56.2	1,167
Plymouth, 0.8 mile north of, at E. Bew's store, opposite road east to Coldwater, 15 feet west of road north to Dragonville, 2.5 feet west of telephone pole, inside of wire fence; iron post stamped "Prim. Trav. Sta. No. 28, 1916"	37	38	17.4	76	47	17.2	1,727
Little Plymouth post office, T road corners at, road southwest	37	37	41.5	76	47	39.4	4,046
Clifton Landing, T road northeast	37	37	04.4	76	48	40.6	6,190
Clifton triangulation station, on left bank of Mattaponi River, 0.25 mile above Clifton wharf, on lower part of large marsh, about 180 meters above the mouth of creek running behind marsh, in front of western quarter of a small circle of pine trees on opposite side of creek, 6 meters back from high water river line and 12 meters back from lower outer grass line, on somewhat firm marsh ground, 1 foot above ordinary high water; marked by an iron pipe	37	36	25.70	76	49	18.76	4,972

Magnetic declination for northeast quarter of quadrangle, 5° 30′ W.; for center of east half of quadrangle, 5° 30′ W.

NEWPORT NEWS QUADRANGLE.

South along Norfolk Southern R. R. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Second-class road crossing	36	49	24.6	76	15	18.4	
Road crossing	36	49	14.8	76	15	28.2	1,265
Carolina Junction, south rail of Virginian Ry. and east rail of Norfolk Southern R. R	36	49	00.1	76	15	42.9	1,908
Road crossing, 300 feet south of south end of siding	36	48	25.6	76	15	29.1	3,670
Road crossing	36	48	09.8	76	15	24.3	1,641
Providence siding, road crossing just south of	36	47	54.0	76	15	19.5	1,653
Providence Junction, switch at north end of siding, opposite sign "Providence Junction"	36	47	18.6	76	15	08.6	3,682
Second-class road crossing, 36 feet north of semaphore at south end of siding	36	46	53.2	76	15	00.8	2,653

North along Virginian (Tidewater) Ry. (By F. J. McMaugh in 1917–18.)

Second-class road crossing	36	52	18.3	76	15	01.2	
Fairmont Park, intersection of Ocean View electric line and Virginian Ry. at	36	52	36.8	76	15	05.7	1,892
Second-class road crossing	36	52	42.7	76	15	07.2	610
Railroad trestle, south end of	36	53	05.5	76	15	12.9	2,354
Trestle, 400-foot, south end of, about 400 feet south of road crossing	36	53	17.5	76	15	15.9	1,239
Road crossing, about 60 feet south of switch stand (northerly one of two crossings)	36	53	50.9	76	15	24.2	3,447
Trestle, south end of, about 440 feet south of road crossing	36	54	13.5	76	15	29.8	2,327
Second-class road crossing	36	54	27.5	76	15	35.9	1,503
Point of switch, 300 feet southeast of road crossing	36	54	32.9	76	15	41.6	715
Intersection of Virginian Ry. and electric railroad, on north rail of Virginian and east rail of east track of electric road	36	55	00.0	76	16	21.3	4,234

South along electric railroad.

Navy Base road, center of, near A. C. Ward's corner, 25 feet north of concrete road, in line with east rail of electric road	36	54	53.1	76	16	22.7	705

NEWPORT NEWS QUADRANGLE—Continued.

West along highway.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road south, center of	36 54 58.7	76 16 59.0	3,002
T lane south, white house with green shutters on west side, yellow store 150 feet east of lane	36 54 57.7	76 17 57.9	4,786
On electric railroad, west rail of east track, 12 feet north of mile-post marked "N 6"	36 54 58.0	76 18 31.9	2,758

North along electric railroad.

Lawless station	36 55 02.4	76 18 36.7	589
Glendale Avenue crossing, on west rail of east track	36 55 38.9	76 19 04.4	4,323
Intersection of Pine Beach electric line and belt line, south rail and west rail of east track	36 56 14.0	76 19 07.4	3,650
Intersection of Virginian Ry. and Pine Beach electric line, 65.14 feet east of west rail of east track, 8 feet east of east abutment of railroad bridge, 3 feet south of telegraph pole; iron post stamped "Prim. Trav. Sta. No. 4, 1917"	36 56 32.5	76 19 08.2	1,872
Overhead bridge of Virginian Ry., center of	36 56 33.0	76 19 09.0	83

East along electric railroad from Pine Beach to Ocean View.

Intersection of west rail of railroad spur and north rail of electric road	36 56 40.0	76 18 25.8	3,582
Pennsylvania State Building, tower of (U. S. Coast and Geodetic Survey triangulation station)	36 57 02.87	76 18 47.44	2,899
Bush Creek, west end of bridge over	36 56 38.3	76 18 05.7	1,642
Road crossing	36 56 27.0	76 17 33.8	2,837
Mason Creek, west end of bridge over	36 56 24.0	76 17 09.0	2,033
Mason Creek, center of draw span over	36 56 24.1	76 17 02.7	513
Road crossing	36 56 29.1	76 16 45.2	1,509
Road crossing	36 56 41.0	76 16 27.4	1,880
Road crossing near Ridgeville station	36 56 56.1	76 16 03.0	2,499
Road crossing at Windemere station	36 57 02.8	76 15 51.0	1,192
Virginia Bay station, 100 feet north of, on east rail of west track, in line with north rail of south track of electric railroad	36 57 28.0	76 15 23.2	3,395
Ocean View station, south end of	36 57 12.4	76 15 02.6	2,304

West on highway from Oxford station.

Intersection of Ocean View road and Pine Beach road	36 54 58.1	76 15 15.8	.....

West along highways and railroads. (By F. J. McMaugh in 1918.)

Carolina Junction, intersection of Virginian Ry. and Norfolk Southern R. R	36 49 00.1	76 15 42.9	.....
Road crossing	36 48 56.7	76 15 46.3	440
Road crossing	36 48 47.7	76 15 55.3	1,172
Intersection of Virginian and Norfolk & Western railroads, south and west rails	36 48 34.2	76 16 08.9	1,756
Middle of road, at trolley line	36 48 07.4	76 16 35.7	3,482
South rail, at east end of trestle	36 47 48.4	76 16 59.5	2,721
Tank of Texas Oil Co	36 47 51.5	76 17 15.0	1,303
Draw span over South Branch, center of	36 47 49.4	76 17 35.3	1,656
South Branch station, south rail at semaphore	36 47 49.2	76 18 07.5	2,620
Intersection of Virginian Ry. and trolley line	36 47 44.1	76 18 41.9	2,847
Intersection of Deep Creek road and Virginian Ry	36 47 34.8	76 19 44.8	5,198
T road southwest	36 48 13.8	76 19 20.0	4,429
South end of bridge	36 48 35.1	76 19 03.2	2,552
Road crossing trolley to east	36 49 01.8	76 19 31.4	3,544
Petersburg Excelsior Mill, east of, Southern Ry. and Belt Line, east and south rails	36 49 26.4	76 19 47.2	2,800
Point of switch, east of junction of single track of Southern Ry. and main line of Seaboard Air Line Ry., cabin 100 feet south	36 49 21.3	76 20 20.5	2,760
Portsmouth, intersection of Seaboard Air Line Ry. and Elm Avenue, 86 feet north of, in southwest corner of S. B. Carney's yard, 25 feet east of center line of road; iron post stamped "Prim. Trav. Sta. No. 10, 1918"	36 49 11.1	76 20 42.8	2,084
Portsmouth, 12 feet east of center of road, 4 feet west of east end of pipe culvert across Elm Avenue, near intersection of east and west road at Brick School; stake	36 49 44.4	76 20 51.4	3,442

NEWPORT NEWS QUADRANGLE—Continued.

West along highways and railroads—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Portsmouth, center line of Rodman Avenue and south rail of Atlantic Coast Line R. R	36	50	06.3	76	20	51.5	2,210
Middle of draw span over West Branch	36	50	31.6	76	21	42.6	4,881
North edge of road, in front of S. C. Guard's store, opposite T road south	36	51	03.5	76	22	40.9	5,731
Center of culvert, at east edge of road	36	51	24.5	76	23	10.1	3,189
Churchland, west rail of west track of Atlantic Coast Line R. R., 10 feet north of center line of road	36	51	43.7	76	23	36.7	2,904
Churchland, north of, 1,400 feet east of road crossing, east rail, opposite east end of platform marked "10½"	36	52	22.6	76	23	45.1	3,995
Center of culvert, about 200 feet northeast of house on farm	36	52	48.5	76	24	22.6	4,021
Edge of road, 7 feet N. 72° 30′ W. of, the more western of two pine trees in field	36	53	01.1	76	24	07.2	1,781
North end of footbridge	36	53	27.0	76	24	10.0	2,634
Craney Island, west base (2), triangulation station, on high-water line of the track, 100 meters from station west base (Craney Island base). Station marked with a 5-inch terra-cotta pipe, filled with concrete (U. S. Coast and Geodetic Survey station) as found by F. J. McMaugh, U. S. G. S., 1918	36	53	52.20	76	24	16.21	2,593

South along railroads and highways. (By F. J. McMaugh in 1918.)

Churchland, west rail of west track of Atlantic Coast Line R. R., at road crossing	36	51	43.7	76	23	36.7	.....
Churchland, west rail, at north end of platform	36	51	44.8	76	23	45.1	693
West rail, at north end of trestle	36	51	31.8	76	24	14.3	2,717
Myers station, about 300 feet southwest of, road crossing	36	51	08.4	76	24	57.8	4,252
Public-road crossing, near north yard-limit sign; platform northeast of crossing, white house southeast	36	50	46.2	76	25	38.8	4,016
Boone Junction, intersection of west rail of Southern Ry. and north rail of Atlantic Coast Line R. R	36	50	33.3	76	26	02.6	2,334
West rail, at point of switch near sawmill	36	50	01.4	76	27	01.2	5,762
West rail, at public-road crossing, about 500 feet south of trestle; covered station platform southwest of crossing	36	49	32.5	76	27	54.0	5,188
Shoulder Hill, near northeast corner of freight platform, 23 feet west of west rail of railroad track; iron post stamped "Prim. Trav. Sta. No. 11, 1918"	36	49	09.0	76	28	37.3	4,248
West end of platform, about 30 feet east of road crossing	36	48	50.5	76	27	09.7	7,366
Peaks siding, south rail, at center of road	36	48	55.5	76	26	34.0	2,948
Jolliff's Church, east of, road fork northeast	36	48	38.8	76	26	09.8	2,591
Jolliff's School, 67 feet S. 63° 31′ E. from front door of; iron post stamped "Prim. Trav. Sta. No. 12, 1918"	36	48	07.8	76	26	22.7	3,310
Road forks southwest and east, 40 feet S. 32° W. of southwest corner of Mansfield's store, 20 feet S. 60° W. of pump and N. 40° W. of blazed pole on east side of road	36	47	48.3	76	26	04.0	2,486
Small T road north	36	47	21.8	76	25	16.0	4,732
Bowers Hill, road crossing	36	47	10.0	76	24	45.3	2,775
Center of bridge over creek	36	47	00.8	76	24	34.2	1,289
Center of bridge over creek, near Indian School	36	46	59.0	76	24	03.1	2,540
Intersection of highway and Virginian Ry., 93.6 feet northeast of; iron post stamped "Prim. Trav. Sta. No. 13, 1918"	36	46	56.8	76	23	56.4	588
Second-class T road east	36	46	35.0	76	23	23.8	3,449
Intersection of second-class road west, 45 feet north of mail box 132	36	46	22.4	76	22	32.6	4,358
Center of road, at pipe culvert	36	46	03.2	76	21	48.8	4,060
Yadkin station, 13 feet east of road crossing, south rail of center of three tracks	36	45	49.7	76	21	43.8	1,421
South rail of middle track opposite milepost N 10 B 398	36	45	54.8	76	21	13.0	2,553
Yadkin station, 1 mile east of, at public-road crossing, 73 feet northeast of south rail of middle track; iron post stamped "Prim. Trav. Sta. No. 14, 1918"	36	46	00.8	76	20	40.3	2,729
South rail, opposite milepost N 9 B 399, near point of switch, 60 feet east along track to road crossing	36	46	05.5	76	20	08.6	2,619
South rail of north track, at road crossing; elevation painted "15.6"	36	46	12.4	76	19	27.4	3,425
South rail, opposite west end of north wing wall	36	46	16.1	76	19	05.0	1,865
Gilmerton station, west end of, south rail of north track	36	46	21.5	76	18	32.8	2,672
West end of bridge approach, opposite operating house	36	46	29.4	76	17	45.1	3,964
Intersection of Elizabeth River Belt Line and Norfolk & Western Ry., 76 feet southwest of; iron post stamped "Prim. Trav. Sta. No. 15, 1918"	36	46	32.7	76	17	21.9	1,912
South rail of north track, at west end of trestle, at road crossing	36	46	43.5	76	16	47.6	3,001
Extreme west rail of most westerly track, at road crossing	36	47	07.3	76	16	17.6	3,428
West rail, opposite milepost marked "N 4 B 404"	36	48	04.9	76	16	02.9	5,944
South Norfolk Junction, intersection of Virginian Ry. and Norfolk & Western Ry., south and west rails	36	48	34.2	76	16	08.9	2,998

Magnetic declination for quadrangle, 5.0° W.

NEWPORT NEWS QUADRANGLE—Continued.

Along Southern Ry. in southwest part of quadrangle. (By H. J. Switzer in 1917–18.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Shoulder Hill, Prim. Trav. Sta. No. 11, 1918 (described previously)	36	49	09.02	76	28	37.28	.....
Point of switch at west end of siding	36	48	50.0	76	29	11.4	3,381
Bridge AD 9.9, at east end of, on north rail	36	48	36.4	76	29	36.1	2,434

Northeast along highways. (By J. J. Charters in 1918.)

T road east to residence	36	54	29.8	76	29	56.8	.....
Crittenden, in Methodist parsonage lot, 55.8 feet from southeast corner of house, 85.4 feet from northeast corner of church; iron post stamped "Prim. Trav. Sta. No. 2, 1918 C"	36	54	41.2	76	29	54.5	1,169

PETERSBURG QUADRANGLE.

South along highways near east border of quadrangle. (By J. H. Wilson in 1916–17.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prince George courthouse, about 2 miles northeast of, crossroads	37	14	00.9	77	15	51.5	.....
Road forks, at road northeast	37	13	20.6	77	15	36.6	4,246
Prince George courthouse, about 2 miles southeast of, 0.25 mile north of Mount Sinai Church, road forks at road northwest	37	12	10.9	77	15	35.7	7,051
Blackwater Swamp, south end of bridge over	37	11	39.8	77	15	34.1	3,156
Crossroads, 50 feet east of mail box 54	37	11	05.7	77	16	10.8	4,557
T road east, about 0.5 mile southeast of sawmill, which is about 0.25 mile west of road	37	10	03.6	77	16	19.9	6,317
Milepost N 72 on Norfolk & Western Ry., 150 feet southeast of, second-class road crossing, westbound track	37	09	14.6	77	16	32.7	5,063
Milepost 71, westbound track	37	08	44.1	77	15	45.7	4,900

Along highways in southeast corner of quadrangle.

Jerusalem plank road, at road northeast to Disputanta, just north of Moores Mill Pond	37	00	43.7	77	16	32.0	.....
Road northwest at colored schoolhouse	37	01	48.4	77	15	30.3	8,236
Bridge over creek	37	02	39.4	77	15	02.6	5,625

Magnetic declination along east border of quadrangle, 3° 39′ W.; for southeast corner of quadrangle, 2° 30′ W.

On highway near southwest corner of quadrangle. (By J. C. Fales in 1918.)

T road north, 300 feet to unpainted farm buildings	37	00	01.6	77	29	28.1	.....

PINEY POINT QUADRANGLE.

West along highways near south border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T road corners	38	00	00.1	76	34	57.8	(4,129)
North end of a 350-foot pile bridge over inlet	38	00	27.1	76	35	11.6	2,952
T road corners, road northeast to Kensale	38	01	07.2	76	36	11.0	6,245
Old Bear Corners, forks of road at, 80 feet southwest of front of Mrs. Evan's store, about in line with road westerly and road southeast; iron post stamped "Prim. Trav. Sta. No. 15, 1916"	38	01	14.2	76	36	29.7	1,653
T road corners, roads north, south and east	38	01	42.4	76	37	52.9	7,245
Road forks, road easterly	38	01	17.9	76	38	21.7	3,387
Three corners at Acorn, about in line with roads in three directions	38	01	09.9	76	38	56.9	2,930
Oldham post office, crossroads at	38	00	23.1	76	39	49.5	6,327

PINEY POINT QUADRANGLE—Continued.

Along highways in southwest corner of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks, small persimmon tree in center of grass triangle	38	00	23.4	76	43	42.7	(3,349)
Lyells, 1.25 miles north of, near forks of road, road southwest to Ethel, 12 feet southwest of Lyels-Nomini Grove road, 45 feet southeast of road to Ethel, at edge of woods; iron post stamped "Prim. Trav. Sta. No. 19, 1916"	38	00	41.6	76	44	11.8	2,966

Magnetic declination near south border of quadrangle, 5° 45′ W.

PORT ROYAL QUADRANGLE.

Along highways in southeast corner of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Lloyds post office, T road corners at	38	00	04.9	77	00	40.9	.....
Road forks, road north and road south through gate to house	38	00	12.0	77	02	05.3	6,790
Road southeast, second class	38	00	01.6	77	03	06.3	4,996

Magnetic declination for southeast corner of quadrangle, 4° 50′ W.

RICHMOND QUADRANGLE.

East along highways near north border of quadrangle. (By E. L. McNair in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Bridge over small stream	37	44	22.2	77	20	14.8	.....
Center of bridge over small stream	37	43	21.0	77	18	25.9	10,726
Road forks, T road southwest	37	42	50.6	77	17	53.6	4,024
Road forks, in line with road east and road northeast	37	42	39.1	77	17	28.5	2,327
Nelson's bridge over Pamunkey River, on line between Hanover and King William counties, center of truss on wooden bridge	37	42	54.0	77	17	22.3	1,591
Private T road southeast	37	44	03.9	77	16	11.9	9,046
Road forks, private road east, about 50 feet northwest of mail box	37	44	11.9	77	16	07.2	901
Second-class road, T road southeast	37	44	52.9	77	16	16.6	4,215

Magnetic declination for north border of quadrangle, 5° 05′ W.

Along highways through northeast corner of quadrangle.

NOTE.—The positions on this line have not been adjusted, as the closing error of 3.24″ in longitude is excessive. It is thought that a mistake in measurement of 300 feet may have been made between the position of station 4219, at angle in road, and that of station 4221, at T road south, on the King William sheet. The positions as given for this sheet are based on the adjusted position of station 2981 at road forks.							
Road forks	37	42	39.1	77	17	28.5	.....
Road forks, road southwest	37	42	26.7	77	16	44.0	3,811
Road forks, road southwest	37	41	58.4	77	15	42.5	5,720
Road forks, road southwest	37	41	57.8	77	15	35.3	581

SMITHFIELD QUADRANGLE.

South along highways through center of quadrangle. (By J. J. Charters in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Smithfield, Main and Commerce streets	36	58	58.8	76	37	49.2	.....
West abutment of bridge over Peg River	36	58	56.7	76	37	17.5	2,580
Road crossing	36	58	48.7	76	36	43.5	2,879
T road south	36	57	01.8	76	35	51.5	11,598
Benns Church, 153 feet northwest of northwest corner of, at corner of church property; iron post stamped "Prim. Trav. Sta. No. 1, 1918 C"	36	56	15.8	76	35	10.7	5,713
Center of road, at junction of T road east	36	55	16.8	76	34	51.2	6,171
T road south	36	54	20.1	76	34	38.5	5,826
Northeast corner of Whitehead Church property	36	53	08.3	76	34	58.7	7,447
Gate at crossing of road and Nansemond and Isle of Wight county line	36	52	47.2	76	34	55.9	2,144
Chuckatuck, 69.2 feet from Pinner's store; nail in stake	36	51	42.0	76	34	50.4	6,610
Junction of T road southwest with Exchange Road	36	51	07.6	76	35	23.2	4,383
Center of road, opposite 8-mile post	36	50	45.7	76	35	29.2	2,272
T road south through woods	36	50	08.1	76	35	21.0	3,859
Center of road, opposite 6-mile post	36	49	13.6	76	34	47.0	6,163
Rieds Ferry; iron post stamped "Prim. Trav. Sta. No. 3, 1918 C"	36	48	24.2	76	34	34.7	5,088
Road, opposite mail box	36	48	00.1	76	34	45.1	2,587
T road southwest, opposite three mail boxes	36	47	15.2	76	35	19.6	5,339
Center of road, opposite mail box	36	46	35.3	76	34	59.8	4,340
T road north	36	45	36.0	76	35	15.5	6,139

From Chuckatuck northeast along highways. (Checked spur line.)

Chuckatuck, at store, nail in stake	36	51	42.0	76	34	50.4	.....
T road east	36	51	40.8	76	34	04.8	3,709
T road north	36	52	03.4	76	33	26.8	3,845
T road southeast, Nansemond River road	36	52	19.8	76	33	03.2	2,537
Center of road, opposite mail box of T. L. Griffin	36	52	38.2	76	32	18.6	4,074
T road north	36	52	49.6	76	32	07.2	1,478
Junction of T road	36	53	06.6	76	31	14.0	4,650
Junction of T road north	36	53	30.3	76	31	05.4	2,495
Hobson post office, center of road opposite	36	53	54.8	76	30	34.4	3,540

Southwest along highways from Chuckatuck to Windsor.

Chuckatuck, at store, nail in stake	36	51	42.0	76	34	50.4	.....
Junction of Exchange-Suffolk road	36	51	07.3	76	35	23.6	4,419
T road west, opposite two mail boxes	36	50	53.8	76	35	40.1	1,910
Center of road, opposite negro church	36	50	41.4	76	35	54.5	1,712
Junction of T road to Rieds Ferry	36	50	34.6	76	36	11.6	1,547
Center of road, opposite drive to Menton farmhouse	36	50	22.8	76	37	10.4	4,917
Center of drawbridge about 50 feet long	36	50	19.4	76	37	35.4	2,061
Everett, 38.5 feet from northeast corner of Saunder's house, in northeast corner of yard; iron post stamped "Prim. Trav. Sta. No. 4, 1918 C"	36	50	18.4	76	37	43.0	621
County-line monument, at edge of woods and road	36	50	07.2	76	38	27.5	3,787
Junction of road crossing north and south, northwest of house	36	49	48.7	76	38	56.1	3,015
T road north, at Griffith's mail box	36	49	33.3	76	39	29.3	3,090
Center of road, at creek crossing	36	49	18.6	76	40	08.1	3,480
T road north to farmhouse	36	49	15.4	76	40	43.6	2,900
Crossroads at store	36	49	12.9	76	41	01.8	1,498
Center of creek crossing road	36	48	52.6	76	41	37.1	3,526
Wooden bridge over creek	36	48	40.2	76	42	48.1	5,907
T road north, at Holland's mail box	36	48	37.0	76	43	35.2	3,838
Windsor, opposite Buck School, center of road	36	48	32.2	76	44	29.4	4,431
Windsor, in cement base of railroad gate, on west side of track; tablet stamped "Prim. Trav. Sta. No. 8, 1918 C"	36	48	28.9	76	44	42.5	1,114

Northwest along Norfolk & Western Ry. and highways.

Road crossing	36	45	35.5	76	40	20.0	.....
Myrtle, road crossing at	36	46	22.7	76	41	31.4	7,520
Road crossing	36	46	56.5	76	42	22.9	5,400
Nansemond and Isle of Wight county line	36	47	01.0	76	42	29.7	721
Road crossing	36	47	27.5	76	43	09.8	4,219
Road crossing	36	48	03.6	76	44	04.5	5,750
Windsor, Prim. Trav. Sta. No. 8	36	48	28.9	76	44	42.5	4,015
First culvert beyond colored church	36	48	59.8	76	44	42.8	3,127
Crossroads	36	50	16.9	76	44	50.9	7,824

SMITHFIELD QUADRANGLE—Continued.

Northeast along highways near west border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Windsor, 3 miles north of, in C. E. Cair's front yard, 724 feet east of north corner of house, 6 feet from wooden picket fence; iron post stamped "Prim. Trav. Sta. No. 9, 1918 C"	36	51	29.3	76	44	55.5	.....
Center of road, opposite R. B. White's mail box	36	52	12.3	76	44	11.8	5,611
Cement culvert	36	52	29.9	76	43	42.2	2,999
Center of drive to cottage	36	52	58.9	76	44	00.9	3,303
Center of State road, at north rail of narrow-gage railroad	36	53	21.5	76	43	55.5	2,335
Concrete culvert	36	53	52.9	76	43	03.7	5,272
Isle of Wight, 82.7 feet north of U. S. Coast and Geodetic Survey monument; iron post stamped "Prim. Trav. Sta. No. 10, 1918 C"	36	54	28.8	76	42	29.7	4,567

Southwest along highways.

Benns Church, Prim. Trav. Sta. No. 1	36	56	15.8	76	35	10.7	.....
Junction of Isle of Wight and Smithfield roads	36	56	16.3	76	36	20.7	5,688
T road north, center line south of both roads	36	55	35.1	76	37	10.5	5,809
Center line of road to Isle of Wight	36	55	01.8	76	37	28.4	3,678
T road south, center line south of both roads	36	54	36.2	76	38	09.2	4,204
Crossroads	36	54	18.2	76	38	44.0	3,369
T road opposite mail box	36	54	06.5	76	39	33.9	4,224
Crossroads at Hart's store	36	54	00.1	76	40	32.3	4,793
East gatepost of Allmond's farm	36	54	28.8	76	40	56.5	3,508
Junction of Bowling Green road	36	54	40.6	76	42	13.0	6,330
Isle of Wight, Prim. Trav. Sta. No. 10	36	54	28.8	76	42	29.7	1,809

Magnetic declination for center of quadrangle, 5.8° W.; for northeast part of quadrangle, 6.3° W.; for south part of quadrangle, 5.5° W.; for west part of quadrangle 5.6° W.; for southwest part of quadrangle, 5.5° W.

Southwest along Southern Ry. (By H. J. Switzer in 1917–18.)

Signpost reading "Railroad crossing 1 mile"	36	48	22.9	76	30	00.5	.....
Second-class road crossing	36	48	13.2	76	30	18.1	.....
Intersection of north rail of Southern Ry. and east rail of Atlantic Coast Line R. R. at "Atlantic Coast Line crossing"; a road crossing is 1,000 feet east along track	36	47	53.7	76	30	53.2	3,466
Beamon, north rail at east end of station	36	47	33.8	76	31	29.3	3,561
Road crossing, near Wilroy station	36	47	11.3	76	32	01.0	3,435
Pipe culvert	36	46	50.6	76	32	18.0	2,512
Road crossing	36	46	14.6	76	32	47.3	4,348
Northeast end of trestle A D 14-31	36	45	43.1	76	33	10.9	3,720
Road crossing	36	45	00.6	76	33	42.6	5,008

Northwest along highways in northwest corner of quadrangle. (By J. J. Charters in 1918.)

Concrete culvert (located)	36	53	52.9	76	43	03.7	.....
T road north	36	54	11.7	76	43	17.3	2,206
Intersection of narrow-gage railroad and Isle of Wight-Bobs road	36	54	41.0	76	44	30.6	6,646
Crossroads	36	54	47.9	76	44	50.9	1,790

South along highways near west border of quadrangle.

Windsor, Prim. Trav. Sta. No. 8 (previously located)	36	48	28.9	76	44	42.5	.....
Center line of road, at first turn out of Windsor on road to Boaz	36	48	15.9	76	44	48.2	1,388
Center line of road, opposite C. F. Harris's mail box	36	47	47.2	76	44	48.7	2,892
Junction of double culvert and road in woods	36	47	37.0	76	44	41.5	1,182
T road southeast	36	46	52.4	76	44	45.9	4,512
T road east to farmhouse	36	46	30.8	76	44	43.9	2,189
Center of north end of small wooden bridge	36	45	24.8	76	44	57.6	.....
Junction of crossroads bearing east and west and north and south	36	45	06.0	76	44	52.2	1,939

SOUTH HILL QUADRANGLE.

Southwest along Southern Ry. through northeast quarter of quadrangle. (By J. C. Fales in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
130-foot trestle, at east end of, south rail	36 43 44.0	78 00 17.5	.....
Milepost 106, opposite and 8 feet north of	36 42 29.6	78 00 46.3	7,888
Overhead road crossing, under west edge of, north rail	36 42 13.0	78 01 15.7	2,920
Brodnax, on north side of track, on west side of road-crossing at depot; iron post stamped "Prim. Trav. Sta. No. 17, 1918"	36 42 19.8	78 01 57.8	3,492
Road crossing, north rail at	36 41 47.6	78 03 21.0	7,517
Milepost 110, south rail opposite	36 41 38.7	78 04 35.0	6,097
La Crosse, intersection of north rail of Southern Ry. and east rail of Seaboard Air Line Ry., at southwest corner of Southern Ry. station	36 41 48.7	78 05 37.4	5,181
La Crosse, 8 feet north of milepost 111; iron post stamped "Prim. Trav. Sta. No. 18, 1918"	36 41 48.9	78 05 38.0	48

Southwest along Seaboard Air Line Ry. through northeast quarter of quadrangle.

Steel trestle, at south end of, east rail	36 44 42.8	78 03 35.1	.....
Overhead road crossing, west rail under north edge of	36 43 43.5	78 04 23.0	7,155
Milepost 77, center of track opposite	36 43 17.6	78 04 51.2	3,482
Milepost 78, east rail opposite	36 42 33.5	78 05 22.7	5,142
La Crosse, intersection of Seaboard Air Line and Southern railroads	36 41 48.7	78 05 37.4	4,684

Along highways. (By J. C. Fales in 1918.)

Crichton post office, north edge of road, opposite front door of J. R. Temple's store	36 40 17.0	78 00 47.2	.....
T road to Brodnax	36 40 29.5	78 01 31.1	3,799
South end of timber highway bridge 40 by 18 feet, having railing both sides	36 41 09.6	78 01 49.2	4,314
Prim. Trav. Sta. No. 17, 1918 (previously described)	36 42 19.81	78 01 57.77	7,130

SUFFOLK QUADRANGLE.

South on highways in northeast part of quadrangle. (By J. J. Charters in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
One-mile post	36 44 53.4	76 35 01.2	.....
Suffolk, at southwest corner of office of county clerk; iron post stamped "Prim. Trav. Sta. No. 5 P, 1918"	36 44 16.5	76 34 58.4	3,740

West on Virginian Ry. near north border of quadrangle.

Road crossing	36 44 03.1	76 35 47.2	4,198
East end of wooden bridge No. 2 over narrow-gage railroad	36 44 00.1	76 36 22.8	2,913
Wooden bridge over tracks	36 43 52.6	76 37 27 6	5,330
Norfolk & Western Ry. span bridge over tracks of Virginian Ry.	36 43 51.1	76 37 41.6	1,144
Opposite milepost N 27, near switch on north	36 43 54.9	76 38 37.4	4,568
Kenyon, 50 feet south of station; iron post stamped "Prim. Trav. Sta. No. 5, 1918 C." Elevation 72 feet	36 43 59.8	76 39 20.4	3,536
Road crossing	36 44 03.4	76 39 45.3	2,058
Bridge over deep cut, east end of	36 44 13.5	76 41 05.1	6,580
Road crossing	36 44 26.2	76 42 46.0	8,318
Road crossing	36 44 35.6	76 44 00.2	6,122
Road crossing, at edge of woods	36 44 41.7	76 44 48.6	3,990

Northwest on Norfolk & Western Ry. near north border of quadrangle.

Span bridge over tracks of Virginian Ry	36 43 51.1	76 37 41.6	.....
Block signal, concrete base marked "U. S. P. B. M"	36 44 25.2	76 38 33.4	5,454
Road crossing, King road	36 44 54.4	76 39 17.8	4,666

SUFFOLK QUADRANGLE—Continued.

Along Southern Ry. near Suffolk. (By H. J. Switzer in 1917–18.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Suffolk, 1 mile east of, north rail of Southern Ry. at overhead crossing of east track of Virginian Ry	36	44	19.0	76	33	49.8	.....
Road crossing, near yard-limit sign	36	44	05.9	76	34	31.4	3,631
Suffolk, Main Street crossing	36	44	01.6	76	34	55.8	2,036
Suffolk, Prim. Trav. Sta. No. 5, 1918 (previously described)	36	44	16.5	76	34	58.4	1,521

North along Norfolk Southern R. R. (By J. J. Phelan in 1918.)

North Carolina and Virginia State line, brass plate in granite monument on county road (Prim. Trav. Sta. No. 3)	36	33	02.9	76	34	32.6	.....
Crossing of Suffolk highway	36	33	16.0	76	34	33.2	1,322
Road crossing, 877 feet south of milepost 12, west rail	36	34	07.8	76	34	38.4	5,253
Milepost 11, west rail	36	35	08.6	76	34	42.7	6,160
Point on north abutment of short low bridge across swamp	36	35	41.6	76	34	45.3	3,346
Cypress road crossing, 775 feet north of station	36	37	02.7	76	34	46.4	8,205
Point on north abutment of bridge across swamp	36	37	26.3	76	34	43.9	2,395
Saunders, 56 feet north of station, at road crossing	36	38	15.9	76	34	43.1	5,011
Road crossing at stone mill	36	38	35.0	76	34	45.7	1,949
Road crossing	36	38	52.0	76	34	48.1	1,722
Road crossing	36	39	11.2	76	34	50.7	1,960
Crismond flag station, road crossing at, east rail	36	39	43.2	76	34	55.3	3,256
Milepost 5 miles to Suffolk, east rail	36	40	19.8	76	35	06.1	3,801
Russell flag station, road crossing and blind side track at	36	41	09.8	76	35	17.2	5,140
Road crossing, west rail	36	41	52.8	76	35	12.6	4,368
Road crossing, east rail	36	42	51.6	76	34	45.0	6,358
Suffolk, crossing of Madison Street, east rail	36	43	21.3	76	34	39.1	3,045
Suffolk, northeast corner of intersection of Madison and Main streets, at stone crosswalk	36	43	27.2	76	35	03.9	2,100
Suffolk, 5 feet east and 15 feet north of intersection of Buck and Main streets	36	43	46.8	76	34	59.0	2,029
Suffolk, in yard of courthouse, at southwest corner of County Clerk's office; iron post stamped "Prim. Trav. Sta. No. 5 P, 1918"	36	44	16.5	76	34	58.4	2,999

Northwest along highways.

Saunders, road crossing	36	38	15.9	76	34	43.1	.....
Saunders, in southwest corner of field, across from general store; iron post stamped "Prim. Trav. Sta. No. 2, 1918"	36	38	17.4	76	34	45.9	280
On branch road west to Nurney, 40 feet west of center of Corapeake road	36	38	06.0	76	35	01.1	1,691
Center of crossroads	36	38	14.7	76	36	40.4	8,145

Southwest along Atlantic Coast Line R. R.

Nurney, at station, 2.5 feet from north rail of road crossing of Atlantic Coast Line R. R., on main track; iron post stamped "Prim. Trav. Sta. No. 4 P, 1918"	36	38	32.6	76	36	50.2	1,962
Road crossing, northwest rail	36	38	15.4	76	37	09.2	2,322
Northeast end of bridge 86, northwest rail	36	38	01.8	76	37	24.4	1,855
Culvert 87, northwest rail	36	37	35.9	76	37	53.2	3,518
Harrell siding, road crossing, northwest rail	36	37	04.4	76	38	28.3	4,287
Milepost 29, northwest rail opposite	36	36	31.7	76	39	04.6	4,439
Road crossing, northwest rail	36	35	53.4	76	39	47.3	5,212
Whaley, 470 feet southwest of northeast end of station, at road crossing, northwest rail	36	35	30.5	76	40	12.7	3,104
Road crossing, northwest rail	36	35	06.4	76	40	39.4	3,273
Road crossing, northwest rail	36	34	45.5	76	41	02.7	2,842
Road crossing, northwest rail	36	34	33.2	76	41	16.4	1,671
Milepost 33, northwest rail	36	33	55.9	76	41	57.8	5,068

Magnetic declination for northwest part of quadrangle, 5.5° W.

SUFFOLK QUADRANGLE—Continued.

Southwest along Southern Ry. (By J. J. Phelan in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Suffolk, crossing of Madison Street	36	43	21.3	76	34	39.1	.....
Suffolk, junction of Atlantic Coast Line and Southern railroads, center line of Southern Ry. and east rail of Atlantic Coast Line R. R.	36	43	24.2	76	34	38.5	300
Road crossing, north rail	36	43	11.5	76	34	54.2	1,817
Road crossing, north rail	36	43	06.7	76	35	09.7	1,347
Road crossing, north rail	36	43	00.8	76	35	28.6	1,657
Road crossing, north rail	36	42	45.7	76	36	17.3	4,251
Road crossing, north rail	36	42	37.9	76	36	42.3	2,181
Northeast end of bridge A. D. 20.3 over swamp	36	42	30.0	76	37	09.2	2,333
Road crossing	36	42	26.1	76	37	43.7	2,832
Manning station, road crossing	36	42	18.5	76	38	55.8	5,921
East end of bridge, north rail	36	42	15.2	76	39	27.6	2,617
Road crossing, south rail	36	42	08.8	76	40	03.0	2,957
Northeast end of bridge, south rail	36	42	04.1	76	40	25.4	1,886
Road crossing, south rail	36	41	45.4	76	41	54.3	7,480
Road crossing, 24 feet west of milepost 25, south rail	36	41	42.9	76	42	06.5	1,025
Road crossing, south rail	36	41	31.7	76	42	59.8	4,490
East end of bridge, south rail	36	41	24.7	76	43	44.5	3,711
Road crossing, 1,300 feet east of east end of bridge, south rail	36	41	18.9	76	44	32.0	3,912

North along highways near west border of quadrangle.

T road north to Buckhorn	36	41	26.0	76	44	52.7	.....
Center of culvert under road, east of T road north	36	42	18.0	76	44	39.5	4,575
Buckhorn post office, at Purvis station, on Seaboard Air Line Ry. at crossing, north rail	36	43	24.4	76	44	10.6	7,119
North edge of road, 40 feet east of dilapidated negro dwelling	36	44	04.2	76	44	38.6	4,624
Boaz, 220 feet east of milepost 33, center of plank road crossing	36	44	41.7	76	44	48.6	3,882

Magnetic declination for northwest corner of quadrangle, 5.5° W.

SURRY QUADRANGLE.

On highways in north part of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Powhatan Creek, center of wooden bridge over	37	14	56.7	76	46	22.0	.....
Nightingale's farm, gate in road leading into	37	14	54.1	76	51	29.8	.....
Chickahominy (2) triangulation station, situated on a sandy point forming the southeast side of mouth of Chickahominy River at its junction with James River. Farm on which the station is located is called "Piney Grove." The old station of 1870 is now about 100 feet outside of high-water mark. Search was made for it at low water, but nothing could be found. The station of 1910 is marked by a block of cement 5 inches square and 8 inches high with nail in center buried 3.5 feet deep. Over this was placed a 1910 cement monument, which projects 1 inch above ground. Three inches of sand separate the two cement marks	37	14	30.91	76	52	15.70	4,393

Magnetic declination for north part of quadrangle, 4° 55′ W.

Northwest along highways in south part of quadrangle. (By J. J. Charters in 1918.)

Intersection of road bed of Surry Lumber Co.'s railroad and road	37	00	09.0	76	51	52.9	.....
T road east to farmhouse	37	00	50.6	76	52	24.2	4,918
Walls Bridge, west end of	37	01	26.4	76	52	36.2	3,742
Walls Bridge post office, 75 feet east of forks of road, in southwest corner of front yard of Mrs. Mollie Wilkinson just north of north end of bridge over Blackwater Swamp; iron post stamped "Prim. Trav. Sta. No. 182" (Bull. 245, p. 146)	37	01	32.4	76	52	28.2	895

SURRY QUADRANGLE—Continued.

Northeast along highways in southeast corner of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost 9, opposite center of Smithfield-Ivor road	37	00	09.3	76	46	19.3	
Second-class T road north	37	00	48.6	76	45	56.6	4,382
Bobs, 25 feet north of road, old iron post stamped "Prim. Trav. Sta. No. 242, 1905"	37	01	08.2	76	45	39.7	2,410
Bobs; iron post stamped "Prim. Trav. Sta. No. —, 1917." Elevation 89 feet	37	01	13.3	76	45	34.7	653

Along highways and Surry, Sussex & Southampton Ry. from southwest corner to northeast corner of quadrangle. (By Olinus Smith in 1917.)

Crossroads, in southeast corner of; iron post stamped "Prim. Trav. Sta. No. 132"	37	00	47.5	76	59	39.6	
Center of road at creek crossing	37	01	13.0	76	58	42.2	5,326
Blackwater River, main channel of, center of truss bridge over	37	01	34.2	76	52	43.3	5,234
Dendron, road crossing south of	37	02	27.3	76	56	26.0	8,252
Dendron station, center of track opposite	37	02	45.5	76	55	52.5	3,286
Sexton post office, road crossing at	37	03	20.7	76	55	10.3	4,934
Sexton, 1 mile north of, 10 feet south of center of farm road, in west bank of railroad; iron post stamped "Prim. Trav. Sta. No. 1, 1917"	37	03	55.2	76	54	12.1	5,863
Elberon station, road crossing at	37	04	33.3	76	53	10.6	6,305
Road crossing, second class	37	05	20.4	76	52	22.0	6,175
Moorings station, switchpost at, center of track	37	05	56.1	76	51	45.2	4,681
Road crossing, second class	37	06	57.2	76	50	55.0	7,398
Surry station, 1,800 feet south of, in railroad Y, 50 feet east of main track; iron post stamped "Prim. Trav. Sta. No. 2, 1917"	37	07	59.0	76	50	04.7	7,461
Road crossing, second class	37	08	42.5	76	49	42.1	4,769
Road crossing	37	10	05.4	76	48	12.4	11,088
Crouch Creek, center of highway bridge over	37	10	36.4	76	46	56.0	6,939
Jones triangulation station; recovered the old station mark 14 feet back from edge of bluff and 2 feet below surface. Placed over it a cement monument, which projects 4 inches above the surface	37	10	08.946	76	45	51.759	5,895
Jamestown monument	37	12	31.48	76	46	39.90	14,933

Magnetic declination diagonally through quadrangle from southwest to northeast, 4° 50′ W.

TAPPAHANNOCK QUADRANGLE.

South along highways near east border of quadrangle. (By E. L. McNair in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Forks of road 2,000 feet north of Warsaw, road northwest to Ethel, road north to Lyell	37	57	48.6	76	45	19.4	(7,092)
Warsaw, in courthouse yard, 3 feet south of center of cement wall, about opposite post office and in line of street north; iron post stamped "Prim. Trav. Sta. No. 16, 1916"	37	57	29.9	76	45	27.4	1,998
Road west	37	55	20.8	76	45	00.2	(6,692)
Road west	37	54	05.4	76	45	43.8	5,243
Wellfords wharf, about 800 feet north of, 240 feet west of road, 1 foot south of southeast corner of porch of house of A. W. Velano; iron post stamped "Prim. Trav. Sta. No. 17, 1916"	37	53	16.3	76	45	51.8	5,009

Along highways near north border of quadrangle (east half).

T road corners southeast of Ethel post office	37	59	38.3	76	46	39.6	
T road west at Ethel post office	37	59	47.4	76	46	51.1	1,297
Mount Airy mill, center of bridge over mill race	37	58	59.1	76	47	52.5	6,931
Wooden draw-span bridge across Cat Point Creek, center of	37	59	02.3	76	48	35.9	3,488

TAPPAHANNOCK QUADRANGLE—Continued.

South along highways through center of north half of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of road, in line with road west	37	59	52.3	76	51	20.1	(2,559)
Draw bridge over Cat Point Creek, center of	37	58	28.7	76	51	14.8	8,471
T road south	37	57	54.2	76	50	12.0	6,116
Tie point at traverse line southwest	37	57	43.9	76	50	04.3	1,212

East along highways through center of northeast quarter of quadrangle.

Road forks, road southwest to Tappahannock Ferry, road west to Naylors	37	57	57.4	76	49	49.4	1,811
Crossroads, approximately in line with roads in each direction	37	58	06.0	76	48	02.8	8,585
Road forks	37	57	55.3	76	47	09.2	4,423
Prim. Trav. Sta. No. 16, at Warsaw	37	57	29.9	76	45	27.4	8,550

Magnetic declination near west border of quadrangle, 6° 10′ W.; along north border of quadrangle, 6° 10′ W.; through center of north half of quadrangle, 6° 06′ W.; east through center of northeast quarter of quadrangle, 6° 13′ W.

Along highways through east half of quadrangle from northwest to southeast.

Tappahannock Ferry, 800 feet N. 33° E. from ferry wharf on east side of river, 25 feet east of center of road, small cedar tree in wire-fence line; copper nail in root, not marked	37	57	00.5	76	50	43.4	5,399
Outer end of Tappahannock wharf, on center line about 750 feet from shore	37	55	53.4	76	51	16.1	7,278
Tappahannock Courthouse, in front of soldiers' monument, center of Main Street	37	55	42.0	76	51	36.5	2,001
Hoskins Creek, center of bridge over	37	55	02.8	76	51	32.4	3,977
T road west to Walkerton	37	53	41.6	76	52	21.1	9,091
Forks of road at cut-off, old road runs N. 40° W	37	52	57.9	76	51	57.6	4,804
Private road southeast	37	52	47.8	76	51	42.2	1,605
Piscataway Creek, center of draw bridge over	37	52	14.6	76	50	52.1	5,239
T road southwest	37	51	49.0	76	50	11.5	4,158
Dunnsville post office, 130 feet northwest of, 170 feet northwest of T road southeast and in line with T road southwest, 15 feet northwest of gate and 1 foot west of fence line, 20 feet northeast of center of road; iron post stamped "P. T. S. No. 21, 1916"	37	51	33.8	76	49	21.3	4,312
Crossroads	37	51	03.2	76	48	26.0	5,402
Road northwest	37	50	37.8	76	48	09.9	2,874
Ozeana, forks of road at road northeast	37	49	35.0	76	48	06.4	6,358
T road east	37	49	04.4	76	47	50.7	3,345
Road west	37	48	26.8	76	47	33.5	4,048
Center of crossroads	37	48	17.7	76	46	45.2	3,979
Forks of road	37	48	08.0	76	46	01.6	3,631
Road southeast	37	47	13.9	76	45	07.8	6,979
Montague, T road southwest at church, 0.5 mile north of (tie point)	37	46	11.1	76	45	03.9	6,354

Along highways in southeast corner of quadrangle.

Private road southwest to Dr. Hundley's residence	37	46	45.1	76	46	06.0	(6,059)
Road forks, T road northeast	37	46	59.5	76	46	28.8	2,333
T road north to Center Cross	37	47	00.9	76	46	48.9	1,615
Center of creek, at Birds Bridge, on line between Essex County and King and Queen County	37	46	18.8	76	47	23.7	5,085
Ino post office and store, 100 feet north of, 130 feet N. 62° W. from forks of road in front of store; copper nail in root of white-oak tree, painted "U. S. B. M. 15"	37	45	45.5	76	47	54.8	4,194

Magnetic declination for east half of quadrangle, 6° 00′ W.; for southeast corner of quadrangle, 5° 43′ W.

TAPPAHANNOCK QUADRANGLE—Continued.

East along highways near south border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T road west, about 0.25 mile north of Greenwood store	37	45	13.2	76	59	36.6	
Walkerton, about 2.75 miles northeast of, 1 mile south of Bruington, at forks of road, in center of grass triangle, about in line with roads in three directions; iron post stamped "Prim. Trav. Sta. No. 24, 1916"	37	45	20.6	76	59	26.7	1,087
Contra post office and store, crossroads at	37	45	38.8	76	50	41.5	
Road forks, private road southeast	37	45	52.6	76	50	34.1	1,510
Forks of road, road north	37	46	21.1	76	50	07.6	3,580
Forks of road, road south	37	45	56.8	76	49	06.8	5,471

Magnetic declination along south border of quadrangle, 5° 50′ W.

North along highways near west border of quadrangle, south half.

Prim. Trav. Sta. No. 24	37	45	20.6	76	59	26.7	
Bruington post office and store, center of road opposite	37	46	23.4	76	59	30.2	6,359
T road east	37	46	49.1	76	59	29.4	2,597
Small creek, ford of	37	47	37.2	76	59	03.8	5,274
Road forks	37	48	16.0	76	58	47.0	4,154
Center of bridge over small creek	37	48	25.4	76	58	29.3	1,710
T road south near St. Pauls Church	37	49	43.1	76	58	08.2	8,036
Minor post office and store, 25 feet north and 50 feet west of T road corners at, 50 feet N. 6° 30′ W. from corner of store building, 4 feet inside picket fence, on land of Mrs. V. A. Jones; iron post stamped "Prim. Trav. Sta. No. 33, 1916"	37	50	22.4	76	58	58.9	5,680
Beulah Church, T road west at	37	51	54.9	76	58	40.7	9,463
Center of road, at bridge crossing waste outlet at mill	37	52	31.7	76	58	02.2	4,840
Road forks	37	52	41.8	76	57	49.9	1,420
Dunbrooke post office and store, T road west at	37	53	39.1	76	57	51.5	5,785
Prim. Trav. Sta. No. 27, 0.75 mile west of Dunbrooke	37	53	56.8	76	58	39.1	
T road south	37	53	51.1	76	59	51.4	5,822

Magnetic declination along west border of south half of quadrangle, 7° 00′ W.

Along highways from about center to the northwest corner of quadrangle.

Tappahannock, soldiers' monument at	37	55	41.95	76	51	36.53	
T road corners	37	55	15.9	76	52	36.7	5,494
Road forks, wood road coming into main road at top of hill	37	55	37.2	76	53	34.9	5,135
Road forks, road south	37	56	18.6	76	54	36.9	6,503
T road north	37	56	23.8	76	55	18.0	3,332
Mount Landing post office, road forks at	37	56	35.7	76	55	32.3	1,662
Upper Mount Landing, T road north at	37	56	50.4	76	56	19.2	4,041
Center of bridge over small creek	37	57	44.4	76	56	12.0	5,500
T road northeast, at top of hill, opposite old church	37	58	08.7	76	56	20.8	2,557
Road forks, road north	37	58	53.5	76	57	09.1	5,951
Caret post office, opposite Crutchfields store, in center of triangle at forks of road; copper nail in root of red-oak tree, painted "U. S. B. M. 18"	37	58	57.4	76	57	43.6	2,786
Road forks, road south	37	58	42.9	76	58	10.3	2,598
T road corners, roads north, south, and east	37	58	45.4	76	59	20.1	5,592
Road forks, in line of roads in three directions	37	59	14.3	76	59	33.9	3,120

Along highways near west border of quadrangle.

Rexburg post office, well about 125 feet north of	37	56	11.6	76	59	13.1	
Small creek, center of bridge over	37	55	12.2	76	58	58.9	6,122

TAPPAHANNOCK QUADRANGLE—Continued.

East along highways through center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Dunbrooke, 0.6 mile northwest of, 30 feet south of main east-west road, 10 feet west of a byroad north through farms to Rexburg, 3 feet west of an old gatepost, across road from residence of E. E. Smith; iron post stamped "Prim. Trav. Sta. No. 27, 1916"	37	53	56.8	76	58	39.1	7,788
Dunbrooke post office and store, T road at	37	53	39.1	76	57	51.4	4,220
Crossroads	37	54	01.3	76	57	18.8	3,452
T road south	37	54	17.5	76	56	29.4	4,280
Road east	37	54	05.3	76	55	48.5	3,502
Road forks, at east end of grassy triangle	37	53	25.8	76	54	53.9	5,924
Road forks	37	53	07.3	76	54	00.2	4,701
Small creek, center of small wooden bridge over	37	52	37.5	76	53	49.8	3,119
T road east at Pauls Crossroads; a T road west is about 25 feet south	37	52	11.6	76	53	53.2	2,636
T road north	37	52	05.1	76	52	51.0	5,035
Road forks, in front of store, in line with roads	37	51	23.8	76	51	50.9	6,371
Essex Mill, center of bridge over mill race	37	51	38.2	76	50	41.6	5,741
Prim. Trav. Sta. No. 21, 1916	37	51	33.75	76	49	21.3	6,460

TOANO QUADRANGLE.

East along highways near north border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Slaterville (Dash post office), T road northeast to Plum Point	37	29	57.5	76	56	32.7	.....
Road forks	37	29	54.8	76	55	26.8	.....
Plum Point, southwest of, on back road to New Kent Courthouse, 5.25 miles east of Slaterville (Dash post office), at crossroads in woods, 18 feet south of intersection of roads; iron post stamped "Prim Trav. Sta. No. 49, 1916"	37	29	54.8	76	51	54.9	.....
T road northeast	37	29	40.4	76	51	12.4	3,720
T road northwest	37	29	14.9	76	50	29.8	4,298

Magnetic declination along north border of quadrangle, 5° 00′ W.

South along highways and Chesapeake & Ohio Ry. near east border of quadrangle. (By J. H. Wilson in 1916.)

Crossroads at schoolhouse, center of main road, in line with road northeast	37	29	34.9	76	48	56.1	.....
T road southeast	37	29	00.4	76	48	58.1	3,498
Crossroads	37	28	36.3	76	49	20.2	3,017
Road forks, just northwest of junction of telephone lines	37	27	45.0	76	50	21.9	7,184
Barhamsville, sign post at road forks	37	27	13.0	76	50	29.3	3,291
Barhamsville, about 1 mile south of, road forks at road northeast	37	26	18.9	76	50	09.2	5,712
R. N. Farinholt's mail box, center of road opposite	37	25	24.3	76	49	34.5	6,190
Lane southwest, center of triangle at	37	24	30.8	76	49	11.3	5,730
Toano, road bridge over Chesapeake & Ohio Ry., 5 feet south of southeast corner of, at foot of telephone pole; iron post stamped "Prim. Trav. Sta. No. 50, 1916"	37	23	04.9	76	48	20.4	9,606
Milepost 46, center of east-bound track	37	22	47.6	76	47	16.7	5,434
Overhead wagon bridge, center of west-bound track under	37	22	40.2	76	46	34.4	3,495
Norge, road crossing at depot, east-bound track	37	22	08.9	76	46	08.4	3,802
Second-class road crossing, east-bound track	37	21	10.4	76	45	42.8	6,260
Lightfoot, opposite office window of depot, center of east-bound track	37	20	36.3	76	45	19.4	3,936
Road northwest at two mail boxes	37	16	12.4	76	45	18.9	.....
Five Forks, on embankment at south edge of road forks, at northeast corner of yard of Junction High School; iron post stamped "Prim. Trav. Sta. No. 51, 1916"	37	15	11.0	76	45	57.9	6,962

West along highways near south border of quadrangle.

T road north, 360 feet east of T road south	37	15	12.9	76	47	58.3	.....
Wooden bridge over small creek, center of	37	15	18.6	76	48	46.2	3,916
Crossroads, at southeast corner of, 2 feet southwest of C. B. Nightingale's mail box; iron post stamped "Prim. Trav. Sta. No. 52, 1916"	37	15	15.5	76	50	31.1	8,484

TOANO QUADRANGLE—Continued.

West along Chesapeake & Ohio Ry. through center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing, 480 feet east of milepost 48, west-bound track	37	23	40.5	76	49	09.6	
Road crossing, west-bound track	37	23	21.7	76	50	07.8	5,070
Branch Siding, road crossing at, west-bound track	37	23	06.6	76	50	44.7	3,342
Diascund, road crossing just east of depot, west-bound track	37	23	39.9	76	52	14.6	7,998
Diascund Creek, center of railroad bridge 525 over, west-bound track	37	24	17.2	76	53	38.8	7,775
Lanexa, 60 feet east of southeast corner of depot, on south side of tracks, at west end of wire fence; iron post stamped "Prim. Trav. Sta. 53, 1916. Elev. 24 feet"	37	24	16.2	76	54	41.4	5,053
Walker, road crossing at depot, west-bound track	37	24	56.8	76	56	25.2	9,327
Road crossing, about 850 feet west of milepost 57, west-bound track	37	25	31.7	76	58	09.6	9,129
Windsor Shades, in front of office window of depot, west-bound track	37	25	40.2	76	58	59.1	4,085

Along highways near west border of quadrangle.

Road forks, center of triangle at	37	20	45.4	76	59	38.3	
Road forks	37	20	13.0	76	59	33.0	3,304
Markles store, crossroads at	37	19	32.2	76	59	53.8	4,464
Sturgeon triangulation station, on Sturgeon Point opposite Kennons Marsh, on point of made land at brick works of Catu Mays, 50 feet northeast from present yacht wharf; octagonal sewer pipe with 2-inch iron pipe and point of spike within, all standing 2 inches above the surface	37	18	25.88	77	00	24.20	7,139

Magnetic declination for east border of quadrangle, 5° 09′ W.; for south border of quadrangle, 5° 04′ W.

URBANNA QUADRANGLE.

Northwest along highways. (By E. L. MacNair in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Ebenezer Baptist Church, at forks of road, at southeast corner of foundation of church; bronze tablet stamped "Prim. Trav. Sta. No. 173A"	37	29	57.4	76	31	50.6	
Harper's store, 25 feet southeast of southeast corner of, center of road	37	30	13.8	76	31	26.9	
Olive Branch M. E. Church, center of road opposite	37	30	26.2	76	31	11.1	1,788
Olive Branch M. E. Church, 0.75 mile northeast of, T road east	37	30	37.0	76	30	36.1	3,027
T road corners, 15 feet southeast to mail box	37	31	10.2	76	30	18.5	3,642
Small creek, center of bridge over	37	31	46.9	76	30	43.9	4,240
Freeport store, 700 feet southwest of, 300 feet south of residence of R. H. Fairholt, just inside of yard fence, in line with road southwest, near lane leading to barn; iron post stamped "Prim. Trav. Sta. No. 1, 1916"	37	32	23.0	76	30	27.2	3,898
Freeport, nail in plank on wharf, 20 feet west diagonally from outermost corner	37	32	24.0	76	30	12.7	1,166
Healys Mill, center of bridge over mill race	37	33	52.6	76	30	09.2	
Healy post office and store, T road at, 12 feet northeast to poplar tree	37	34	21.6	76	30	43.3	4,019
Locust Hill post office and store, 0.5 mile east of, 170 feet south and 64 feet west from fence corner of the Rappahannock school building; iron post stamped "Prim. Trav. Sta. No. 2, 1916"	37	35	59.8	76	30	47.2	9,935
T road corners	37	36	05.4	76	31	03.1	1,406
Locust Hill post office and store, center of road opposite	37	36	05.7	76	31	11.3	660
Christ P. E. Church, center of front door	37	36	35.1	76	32	48.1	8,338
Urbanna, 2 miles southeast of, 18 feet west of center of Urbanna-Saluda road, in line with easterly road to Harmony, in front of old store building; iron post stamped "Prim. Trav. Sta. No. 3, 1916"	37	36	05.0	76	33	59.0	6,468
Rosegill farm, opposite entrance to, center of road	37	37	26.1	76	34	07.2	8,233
Urbanna, center of drawbridge across Urbanna Creek at	37	37	55.2	76	34	19.9	3,112
Urbanna, R. S. Bristow's store, T road near	37	38	11.6	76	34	30.0	1,854
T road southwest, on main road from Urbanna to Church View	37	38	18.4	76	35	16.7	3,823
T road northeasterly (second class)	37	38	33.0	76	35	45.3	2,735

URBANNA QUADRANGLE—Continued.

Northwest along highways—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Pine Tree store, 150 feet east of, 10 feet southwest of center of road, in root of gum tree which has signboard marked "Urbanna and Church View;" copper nail and washer, tree painted "U. S. B. M. 2"	37 39 05.3	76 36 33.8	5,088
T road south (second class)	37 38 48.2	76 37 41.2	5,700
T road north	37 38 42.4	76 37 58.1	1,473
Warner post office and store, 2.5 feet east of corner of platform in front of, 22 feet north of gum tree near road; iron post stamped "Prim. Trav. Sta. No. 4, 1916"	37 38 19.6	76 38 43.2	4,303
Oak tree at road forks, in triangle of three roads	37 38 35.0	76 39 13.8	2,914
Forks, 15 feet south of east and west road, in line of road about south	37 38 20.8	76 40 04.4	4,302
T road corners, road north to Church View, driveway south to private house, east and west road between Warner and Mascot	37 38 34.3	76 40 34.4	2,775
Forks of road, 20 feet northeast of cedar tree	37 34 22.7	76 44 45.3	
Driveway north to farmhouse, center of road opposite	37 35 20.2	76 44 05.9	6,624
Negro church, center of road in front of	37 35 38.5	76 43 49.6	2,268
East side of road at angle, opposite lane north to house, in root of large white-oak tree; copper nail and washer, painted "U. S. B. M. 4"	37 37 03.5	76 43 45.1	2,554
Road forks	37 36 12.5	76 43 37.8	1,080
Road forks	37 36 41.7	76 43 51.0	3,134
Road forks, east to Mascot and south to Elsom, in root of small white-oak tree; copper nail	37 37 01.5	76 44 10.7	2,552
Mascot post office and store, 0.6 mile southwest of, 15 feet south of road, in front of Tureman's house, in root of cedar tree; copper nail, painted "U. S. B. M. 6"	37 37 16.5	76 42 54.2	6,338
Mascot post office and store, at west end of platform, 1.5 feet from corner of store, 30 feet north of crossroads; iron post stamped "Prim. Trav. Sta. No. 5, 1916"	37 37 38.0	76 42 26.2	3,133
Piankatank River, east end of bridge across	37 38 01.3	76 41 44.9	4,074

Magnetic declination for south half of east side of quadrangle, 5° 59′ W.; east and west through middle of quadrangle, 5° 36′ W.; for south half of west side of quadrangle, 5° 24′ W.

West along highways on north border of quadrangle. (Checked spur line.)

Whites Chapel (brick church), T road corners at	37 44 44.7	76 33 10.9	(3,885)
T road west	37 44 35.9	76 33 02.9	1,098
Monaskon post office, about 70 feet northwest of, in open, smooth grass plat, 140 feet west of end of wharf; iron post stamped "Prim. Trav. Sta. No. 10, 1916"	37 44 07.5	76 34 06.7	5,882

Magnetic declination along west border of quadrangle, 5° 40′ W.

Southwest along highways in northwest quarter of quadrangle.

Temporary bench mark 14, forks of roads, about 40 feet south and 20 feet east of, in triangle formed by roads; copper nail in root of white-oak tree, painted "U. S. B. M. 14"	37 44 16.5	76 40 12.9	(4,689)
Road northwest	37 43 49.5	76 40 49.8	4,030
Crossroads, in line with road southeast	37 43 18.3	76 43 09.9	(947)
Crossroads, road southwest through gate; second-class road southeast through woods	37 42 22.6	76 42 50.2	(5,848)
Road forks, road east	37 41 03.1	76 43 33.5	8,759
Piscataway Creek, center of Wares bridge across, on Middlesex County and King and Queen County line	37 41 01.4	76 43 36.8	314

Along highways southeast through northwest quarter of quadrangle.

T road west	37 44 24.8	76 43 22.0	(6,182)
T road southwest to Dragonville (tie point)	37 43 27.7	76 43 11.1	5,839
Forks of road near colored church, road about west	37 43 17.9	76 42 42.5	2,502
Jamaica post office and store, T road corner 100 feet north of (tie point)	37 42 55.2	76 41 38.1	6,721
Road southwest	37 42 22.4	76 41 15.5	3,786
Crossroads, in line with road northeast to Waterview	37 41 33.7	76 41 10.0	4,946

URBANNA QUADRANGLE—Continued.

Along highways southeast through northwest quarter of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Church View, T road at, 200 feet east of new store	37	40	40.4	76	40	45.8	5,733
Center of road, at small creek, no bridge	37	40	27.5	76	40	17.0	.....
Center of road, in front of Mt. Zion colored church	37	40	18.6	76	40	01.4	1,552
Evans store, 60 feet west of, 10 feet east of road going north to Waterview, double red-oak tree; copper nail and washer between the two trees, painted "U. S. B. M. 7"	37	40	14.6	76	39	19.8	3,364
Lagrange Mill, center of bridge over spillway outlet of dam, 120 feet east of	37	39	52.4	76	38	25.5	4,913
Streets post office and store, T road northeasterly	37	39	38.2	76	37	08.8	6,330
T road northeast	39	39	17.6	76	36	50.6	2,553
Along highways near west border of quadrangle.							
Road forks, at north end of triangle formed by roads	37	40	11.9	76	44	17.3	5,342
Road forks, road south to Velma, road west to Ware's Church	37	39	42.8	76	43	54.7	3,459
Road forks, at west end of triangle formed by roads, station is in line with road southwest to Little Plymouth and road north to Coldwater	37	39	16.3	76	44	04.5	2,782
Crossroads, second-class roads northeast and southwest through fields	37	38	58.5	76	43	13.0	4,515
Velma store and post office, 40 feet southeast of, 20 feet west of road, on root of white-oak tree; copper nail and washer, tree painted "U. S. N. M. 16"	37	38	46.7	76	42	46.7	2,423
Road forks, road west to Shanghai	37	38	23.3	76	43	08.5	2,948
Road crossing, private roads east and west to farm houses	37	37	56.6	76	42	49.7	3,090

Magnetic declination for northwest quarter of quadrangle, 5° 33′ W.; for west border of quadrangle, 5° 35′ W.

VIRGINIA BEACH QUADRANGLE.

East along highways and north along electric road. (By F. J. McMaugh in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Fork in road, 55 feet east of small bridge over ditch	36	46	48.9	75	59	28.0	.....
Culvert, marked Sta. 413 + 828	36	47	03.2	75	58	47.1	3,622
Center of road opposite old gate	36	47	04.5	75	58	06.6	3,296
T road south	36	47	03.0	75	58	00.7	504
Middle of bridge at temporary bench mark 5.6	36	47	00.8	75	57	51.2	805
Dam Neck Life Saving Station, at northeast corner of concrete runway, 2 feet south of north edge and 3 feet west of east edge; iron post stamped "Prim. Trav. Sta No. 9." Elevation 10 feet. Azimuth to nail in post 153° 23′ 40"	36	47	14.1	75	57	32.6	2,024
Stake on bank, about 300 feet south of concrete house	36	47	53.6	75	57	42.3	4,068
Post at Atlantic Avenue and Churchill Street	36	48	28.6	75	57	52.5	3,632
East rail, opposite fourth trolley pole from point of curve	36	48	57.8	75	58	06.4	3,165
Railroad trestle, line 2 feet west of east rail	36	49	50.2	75	58	18.0	5,387
Lake station, switch point north of,	36	50	24.5	75	58	28.0	3,561
Steel water tank	36	50	47.7	75	58	47.5	2,828
Virginia Beach, Flag Pole triangulation station, Life Saving Station No. 2, U. S. Coast and Geodetic Survey	36	51	08.49	75	58	32.97	2,413

Magnetic declination for quadrangle, 5.8° W.

WELLVILLE QUADRANGLE.

East along highways near south border of quadrangle. (By J. C. Fales in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork north	37	00	05.2	77	57	03.1	.....
Creek crossing	37	00	16.6	77	56	23.3	3,206
Road fork to unpainted house 500 feet south	37	00	19.0	77	56	01.4	1,789
Creek crossing, 600 feet east of colored schoolhouse	37	00	31.5	77	55	33.2	2,615
Crossing of road to Harper's home with a road from Blackstone; hub at northwest corner of	37	00	35.1	77	54	48.2	3,667
Road to house of Junius Wells, west edge of, 95 feet north of wooden gate in woven-wire fence	37	00	27.9	77	54	00.6	3,923
T road to two-story white house 200 feet south	37	00	19.3	77	53	26.4	2,910
T lane to two-story white house 1,000 feet south, three metal mail boxes at T	37	00	08.8	77	53	03.5	2,135
Bridge, wooden, with railings, 16 by 40 feet, west end of	37	00	14.8	77	51	13.4	.....
T road to house of R. A. Eckels 200 feet north	37	00	20.8	77	50	52.7	1,785

Magnetic declination for south border of quadrangle, 4° 17′ W.

WHITE PLAINS QUADRANGLE.

South along highways near east border of quadrangle. (By J. C. Fales in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road, opposite wagon gate at old Hall place	36	43	59.9	77	46	19.9	.....
T road to two-story gray house 300 feet east	36	43	33.7	77	45	30.7	4,802
Road, opposite wooden gate in woven-wire fence to farm buildings on west side of road	36	41	12.9	77	45	11.2	.....
Road, opposite wooden gate to large old house 500 feet east	36	40	20.5	77	45	40.3	5,804
Fitzhugh post office, at intersection of Emporia-Lawrenceville and Edgerton-Triplet roads, at northwest corner of residence plat of W. J. Ferguson; iron post stamped "Prim. Trav. Sta. No. 19, 1918"	36	39	56.5	77	45	52.4	2,620
T road to church 100 feet west	36	39	23.9	77	46	21.0	4,039
T road west	36	38	27.2	77	46	59.9	6,553
T road northeast to farm buildings	36	38	04.3	77	46	30.3	3,345
Wooden bridge, 20 by 14 feet, north end of	36	37	24.1	77	46	11.1	4,358
Triplet post office, opposite Chambliss store road	36	36	37.9	77	45	58.8	4,781
Wooden bridge, 90 by 14 feet, southwest corner of	36	35	32.3	77	45	03.2	6,635
Hub on east side of road, opposite cottage of Z. B. Williams	36	35	06.3	77	46	11.4	2,718
Road, opposite house of B. H. Carpenter	36	34	33.1	77	45	57.0	3,557
Timber bridge, 10 by 12 feet, middle of	36	34	29.8	77	45	07.9	4,018

Magnetic declination for east border of quadrangle, 3° 50′ W.

Southwest along Southern Ry. through northwest corner of quadrangle. (By J. C. Fales in 1918.)

Milepost 100, south rail opposite	36	44	27.1	77	55	57.5	.....
Meherrin River bridge, at east end of trestle approach, south rail	36	44	05.0	77	56	51.2	4,906
Road crossing	36	44	08.4	77	57	36.8	3,725
Farm crossing, seventh joint in south rail west of	36	43	54.0	77	58	59.4	6,879

South and southwest along highways. (By J. C. Fales, in 1918.)

Prim. Trav. Sta. No. 16, 1918 (previously described in Lawrenceville quadrangle)	36	45	22.9	77	51	03.4	.....
Point on entrance road to red brick house, 40 feet from center line of county road	36	44	18.6	77	51	13.4	6,564
Fork in road, at sign marked "2 miles to Main Street Garage"	36	44	06.7	77	50	50.0	2,256
T road south to two-story house	36	43	59.3	77	50	24.8	2,181
Meherrin River, south end of steel bridge over	36	43	00.6	77	49	53.9	6,446
T road southeast to Emporia, 220 feet southwest of hub at bend, in road where lane runs northeast	36	42	49.7	77	49	51.7	1,115

WHITE PLAINS QUADRANGLE—Continued.

South and southwest along highways—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Sign on north side of road, marked "5 miles to Main Street Garage," south edge of road opposite	36	42	39.9	77	50	31.6	3,399
T road east to two-story house 800 feet from road	36	41	46.5	77	51	20.4	6,704
Fork in road, second-class road southwest	36	41	19.7	77	51	27.3	2,766
White church 150 feet west of road, point on road in line with south face	36	40	13.5	77	51	58.9	7,179
Point in road, opposite small gate in picket fence, at front entrance to white house with red trimmings 150 feet west of road	36	39	33.9	77	52	05.0	4,028
Brunswick (Ezells store), 80 feet east of, east of crossroads; iron post stamped "Prim. Trav. Sta. No. 24, 1918"	36	38	51.4	77	52	14.8	4,379
Gholsonville post office, opposite front door of Valentine & Wesson's store, west edge of road	36	38	52.1	77	53	32.2	6,305
T road to log cabin, 350 feet north of road	36	38	20.9	77	54	35.8	6,068
Point in road, in line with west wall of unpainted store building 200 feet north of road	36	37	56.5	77	55	30.9	5,127
Fork in road, road west past front of negro church 500 feet from main road	36	37	47.6	77	56	21.7	4,235
South edge of road, at corrugated iron pipe culvert having C. M. King written in headwall	36	38	09.1	77	57	48.1	7,372
T road to unpainted house 120 feet south of road	36	38	10.9	77	58	29.4	3,374
Meherrin Church (colored), opposite front door of, point in road	36	38	36.8	77	58	38.0	2,710
T road to Vernon Bassett's house 250 feet east of road	36	39	08.2	77	59	06.7	3,948
Second-class crossroad, unpainted house west, white house east	36	39	36.9	77	59	11.3	2,927
Crossing of old and new roads	36	39	56.1	77	59	20.7	2,085
Second-class T road east past well, 40 feet east of road	36	40	00.4	77	59	44.7	2,003

North along highways. (By H. J. Switzer in 1918.)

Farm road east	36	32	54.8	77	56	30.1	.....
Farm road east	36	33	25.4	77	56	29.1	3,094
Logging railroad crossing	36	33	44.6	77	56	32.4	1,965
Logging railroad crossing	36	34	16.6	77	56	36.7	3,245
Intersection of Elams-White Plains and White Plains-Gasburg roads	36	35	17.6	77	56	53.6	6,324
South end of concrete culvert	36	36	01.7	77	57	26.4	5,196
South end of concrete culvert	36	36	41.8	77	57	04.5	4,436
South end of concrete culvert	36	37	21.0	77	57	13.3	4,016
Culvert (previously described)	36	38	09.1	77	57	48.1	5,632

(By J. C. Fales in 1918.)

Prim. Trav. Sta. No. 24, 1918 (previously described)	36	38	51.4	77	52	14.8	.....
T road to gray bungalow 200 feet south of main road	36	38	48.5	77	51	29.7	3,687
East end of timber bridge having concrete abutments	36	38	42.3	77	50	46.8	3,559
Second-class T road south	36	38	51.3	77	49	36.2	5,825
South point of Y at road south, "Metal Shoe" advertisement on 15-inch pine tree at southwest corner of intersection	36	39	08.8	77	49	12.3	2,631
Point in road, opposite woven-wire gate atr oad to unpainted barn 250 feet south of road	36	40	01.3	77	48	31.4	6,280
Junction of Lawrenceville-Emporia road with road from Brunswick	36	40	06.6	77	47	54.4	3,062
Crossing of Emporia-Lawrenceville road and Camp Manufacturing Co.'s logging railroad	36	39	57.5	77	47	28.8	2,279
Prim. Trav. Sta. No. 19, 1918 (previously described)	36	39	56.47	77	45	52.33	7,867

Magnetic declination for center of quadrangle, 3° 43′ W.; for south border of quadrangle, 4° 22′ W.; for west border of quadrangle, 4° 33′ W.; for east border of quadrangle, 4° 33′ W.

See also Emporia quadrangle.

WILLIAMSBURG QUADRANGLE.

South along Chesapeake & Ohio Ry. and highways in southwest portion of quadrangle. (By J. H. Wilson in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost 242, east-bound track opposite	37	20	08.2	76	44	52.7	.....
Ewell, road crossing at section house, east-bound track	37	19	19.6	76	44	10.2	5,991
Road crossing, at James City County and York County line, east-bound track	37	18	09.0	76	43	39.2	7,569
Road crossing, east-bound track	37	17	26.1	76	43	20.4	4,600
Road forks, at road southeast	37	17	02.0	76	44	08.0	4,550
Road east, center of main road in line with, large oak tree stands in triangle	37	16	33.3	76	44	19.5	3,048
Colored schoolhouse No. 2, James City County, opposite door of, center of road	37	16	23.2	76	44	37.4	1,773

Magnetic declination for southwest part of quadrangle, 4° 55′ W.

Along highways. (By J. J. Charters in 1918.)

Williamsburg, 1 mile south of, 442 feet west of Chesapeake & Ohio Ry. crossing, 100 feet north of T road to Kings Mill Bluff; iron post stamped "Prim. Trav. Sta. No. 1"	37	16	00.12	76	40	53.05	.....
Stake in ground, 5 feet north of new telephone pole, temporary bench mark	37	15	36.88	76	40	57.68	2,380
T road west	37	15	26.53	76	41	09.69	1,428
Outlet to lake, center of bridge over, in wooden planking; nail	37	15	08.77	76	41	10.07	1,796
Grove station, about 2 miles northwest of, 50 feet from railroad crossing, 15 feet north of west-bound track; iron post stamped "Prim. Trav. Sta. No. 6, 1918"	37	15	07.05	76	39	46.00	.....
T road east	37	15	31.73	76	39	11.47	1,748
T road (previously described)	37	15	38.14	76	39	52.38	3,370
Blazed tree marked "U. S. P. T. Sta.," 5 feet east of; stake with nail in top	37	15	01.70	76	38	02.68	.....
Creek running east, crossing of	37	15	03.02	76	37	58.68	352
T road northwest (previously described)	37	15	19.68	76	37	55.43	1,705
Stone monument marked "W. A."	37	15	11.68	76	39	47.93	.....
T road northeast	37	15	14.90	76	39	49.23	341
Railroad crossing, on branch of Chesapeake & Ohio Ry., south rail	37	15	34.57	76	39	51.51	1,988
T road	37	15	38.14	76	39	52.38	368
T road south	37	15	47.05	76	39	55.67	939
T road north at L. C. White's mail box	37	15	50.55	76	39	57.54	385
T road west	37	15	57.31	76	40	25.62	2,371
T road southwest	37	15	56.27	76	40	45.50	1,610
Prim. Trav. Sta. No. 1 (previously described)	37	16	00.12	76	40	53.05	723
Intersection of crossroads, at 11 mail boxes	37	15	06.04	76	37	15.39	.....
T road north	37	15	08.50	76	37	27.34	997
Temporary bench mark; elevation 68.4 feet, point in road opposite	37	15	09.26	76	37	42.14	1,198
Road south near temporary bench mark; elevation 85.6 feet	37	15	12.41	76	37	47.84	561
Road northwest	37	15	19.68	76	37	55.43	957
T road southeast	37	15	25.10	76	38	14.06	1,603
T road south	37	15	29.46	76	38	20.28	668
T road north	37	15	33.64	76	38	26.82	677
T road northwest to house	37	15	37.94	76	38	39.88	1,141
Dupont powder mill, on branch railroad to, 15 feet southeast of south rail, 25 feet southeast of crossroads; iron post stamped "Prim. Trav. Sta. No. 11, 1918"	37	15	40.58	76	38	52.88	1,084

Magnetic declination for south border of quadrangle, 5.5° W.

YORKTOWN QUADRANGLE.

CAMP ABRAHAM EUSTIS.

Along highways. (By J. J. Charters, in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Iron post, 30 feet west of road, 400 feet south of house in field; iron post stamped "Prim. Trav. Sta. No. 2"	37	14	40.19	76	40	47.05	.....
Second-class T road west through woods	37	14	36.74	76	40	43.08	475
Concrete culvert with sewer-pipe drains	37	14	13.85	76	40	22.07	2,872
Kings Mill, near ruin of, at right angle in road; stake with nail in top, marked "t. b. m."	37	14	10.29	76	40	21.82	361
Kings Mill Bluff, 20 feet from edge, in first open field east of Kings Mill wharf; iron post stamped "Prim. Trav. Sta. No. 3 C"	37	13	23.28	76	40	02.66	5,001
Center of creek, 20 feet east of east water line of James River	37	13	21.85	76	39	38.91	1,926
Stake, 50 feet from edge of river, 15 feet southeast of tree marked "Posted J. D. Lewis"	37	13	16.63	76	39	05.49	2,754
J. D. Dunn's house, 200 feet south of, 0.25 mile south of main road, 60 feet north of north end of ravine; iron post stamped "Prim. Trav. Sta. No. 4"	37	13	21.96	76	39	03.76	557
Second-class road north and south	37	13	48.54	76	38	58.98	2,715
T road south along wire fence	37	14	10.59	76	39	01.92	2,243
Grove station, 0.75 mile west of, at intersection of T road; 30 feet north of large oak tree; iron post stamped "Prim. Trav. Sta. No. 5, 1918 C"	37	14	20.76	76	38	59.90	1,042
T road east	37	14	22.38	76	39	07.96	672
T road west opposite temporary bench mark	37	14	24.82	76	39	11.29	365
T road	37	14	27.29	76	39	14.98	389
T road west	37	14	28.60	76	39	16.87	201
T road west	37	14	36.62	76	39	25.53	1,071
T road west	37	14	38.87	76	39	28.00	303
T road west	37	14	41.01	76	39	30.45	293
T road west-southwest	37	14	52.88	76	39	37.14	1,317
Prim. Trav. Sta. No. 5, 1918 (previously described)	37	14	20.76	76	38	59.90	.....
Road forks	37	14	40.01	76	38	53.76	2,010
Crossroads	37	14	39.09	76	38	47.06	551
Center of road, 4 feet from old pine log, near witness stake 5 feet high; stake with nail in top	37	14	42.20	76	38	40.81	598
T road south	37	14	47.33	76	38	18.64	1,869
Prim. Trav. Sta. No. 5 (previously described)	37	14	20.76	76	38	59.90	.....
Grove station, 85 feet east of railroad crossing, on east-bound or south track	37	14	13.44	76	38	06.41	4,389
T road northeast	37	14	06.32	76	37	51.02	1,438
T road west	37	14	02.83	76	37	46.77	493
T road east	37	13	56.65	76	37	40.76	792
T road east	37	13	47.71	76	37	37.46	943
T road west	37	13	35.25	76	37	42.69	1,329
T road north	37	13	24.79	76	37	38.50	1,111
T road east	37	13	08.38	76	37	29.55	1,811
Schoolhouse, 300 feet from, near S. A. Lee's mail box, 15 feet east of T road; iron post stamped "Prim. Trav. Sta. No. 7, 1918 C"	37	13	02.90	76	37	22.39	801
T road north to old deserted white house	37	12	45.97	76	37	50.89	2,871
Grove triangulation station of U. S. Coast and Geodetic Survey, about 5 miles on north side of James River, nearly north of Deepwater Shoals Lighthouse, on an estate known as "The Grove" owned by Young B. Choals, on bluff about 100 yards west of ravine, 0.25 mile west of Mr. Choals's house; marked with neck of bottle 4.5 feet below surface, over this an iron screw pile, center marking point, over this a cedar stub, top 8 inches above surface, marked with copper tack, in back range to Deepwater Lighthouse	37	12	30.068	76	37	56.661	1,674
Line post of York and James City counties, 50 feet from, 30 feet south of south rail of east-bound track of Chesapeake & Ohio Ry., 15 feet west of road; iron post stamped "Prim. Trav. Sta. No. 9, 1918"	37	13	58.01	76	37	38.04	.....
T road south	37	14	04.76	76	37	24.58	1,286
T road east	37	14	12.37	76	37	23.47	775
T road southeast	37	14	26.01	76	37	23.53	1,380
A. Williams's mail box, 100 feet east of, 100 feet southwest of old deserted shack, in triangular grass patch at intersection of three roads; iron post stamped "Prim. Trav. Sta. No. 10, 1918"	37	14	48.64	76	37	08.55	2,590

Magnetic declination for north border of quadrangle, 5.5° W.

YORKTOWN QUADRANGLE—Continued.

Northeast along highways near center of quadrangle. (By J. C. Fales in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crawford triangulation station of U. S. Coast and Geodetic Survey, on north side of James River, bears about southeast from Deepwater Shoals Lighthouse, distant 1.25 miles, near Mulberry Point, on rampart near westernmost angle of a large earth fort called Fort Crawford, land belongs to Mr. Crawford, and his dwelling house stands inside the fort. Station is marked with neck of a bottle 5 feet below surface, over this is a locust stub 5 feet long, 9 inches in diameter, top marked with copper tack and flush with surface of rampart; distance from station to outer angle of rampart is 105 feet, distance to inner angle, 97 feet; recovered in 1910	37 07 43.89	76 37 12.42	
Fort Crawford, 0.4 mile northeast of, 50 feet west of road, 8 feet north of gate to second-class road, which leads west to farm; iron post stamped "Prim. Trav. Sta. No. 11, 1918. Elev. 4 feet"	37 08 02.95	76 36 54.39	2,418
North rut in road, in front of gate at entrance leading to white house 200 feet north of road	37 08 08.06	76 36 47.43	764
Hub at intersection whence woods road leads east	37 08 13.37	76 36 37.90	940
Center line of main road, at T whence crossroads lead northerly	37 08 23.68	76 36 23.02	1,592
At south fence of main T whence road leads north from main road; 2 by 4 inch hub with copper nail and washer	37 08 25.03	76 36 15.19	649
Mulberry Island post office, 1.76 miles northeast of, southeast corner of T road east; iron post stamped "Elev. 9 feet. Prim. Trav. Sta. No. 8, 1918"	37 08 36.31	76 36 16.93	1,149
Center line of road, at T whence woods road leads west	37 08 45.29	76 36 19.55	933
Main road, at center line of T road southwest	37 08 55.71	76 36 12.11	1,214
Center of road, opposite center line of road to white house 100 feet south of road	37 08 57.73	76 36 04.82	624
Mulberry Island post office, 2.37 miles northeast of, southeast side of road, opposite center line of T road northwest; iron post stamped "Elev. 7 feet. Prim. Trav. Sta. No. 6, 1918"	37 08 58.02	76 35 58.51	510
Center line of main road, at center line of T road north	37 09 02.75	76 35 49.54	869
Center line of main road, opposite center line of T road north through wooden gate in barbed-wire fence	37 09 06.70	76 35 36.97	1,093
Lee Hall, 3.41 miles south of, 2.89 miles north of Mulberry Island post office, in north corner of T road northwest, 2 feet south of fence-corner post at entrance to Milstead's farm; iron post stamped "Elev. 30 feet. Prim. Trav. Sta. No. 4, 1918"	37 09 11.28	76 35 31.25	654
Center line of woods road, at intersection of center line of nearly obliterated wagon trail which forks to the north at this point; hub with copper nail and washer	37 09 04.26	76 35 24.00	921
Center line of road, 60 feet north of front door of white house of J. C. Wallace 30 feet east of road, hub is 8 feet west	37 09 12.69	76 34 59.66	2,147
Intersection of center line south of two woods roads, 12 feet southwest of; copper nail and washer	37 09 12.06	76 34 41.95	1,436
Northeast corner of T road; iron post stamped "Prim. Trav. Sta. No. 5, 1918"	37 09 11.84	76 34 30.42	933
Intersection of center line at T of new road	37 09 19.13	76 34 31.02	738
Center line of T road east	37 09 27.05	76 34 29.76	807
Peak at top of sawdust pile 35 feet high	37 09 41.55	76 34 29.78	1,467
T road south, 40 feet east of, on south side of road, 200 feet east of church	37 09 54.62	76 34 40.89	1,599
Old earthworks, 1.23 miles south of, at northwest corner of T road fork, opposite administration building whence road leads west to Barley farm; iron post stamped "Prim. Trav. Sta. No. 1, 1918. Elev. 34"	37 09 47.42	76 34 53.98	1,286
Center line of road, opposite small gate at entrance to light blue house 200 feet east of road	37 10 04.15	76 34 33.22	2,385
Center line of main road at T road south	37 10 19.59	76 34 18.20	1,979
Old earthworks, 1.2 miles south of Lee Hall, at northeast corner of intersection of Newport News-Lee Hall road with Mulberry Island road, at foot of signpost; iron post stamped "Prim. Trav. Sta. No. 30, elev. 40, 1918"	37 10 37.08	76 34 11.71	1,845

Magnetic declination for center of quadrangle, 5.5° W.

Checked spur line from Primary Traverse Station No. 1 to Primary Traverse Station No. 2. (By J. C. Fales in 1918.)

Prim. Trav. Sta. No. 1	37 09 47.42	76 34 53.98	
Old earthworks, 1.23 miles southwest and 1.53 miles west of, 250 feet south of house near bridge, on bank of James River; iron post stamped "Prim. Trav. Sta. No. 2, 1918. Elev. 21"	37 09 54.36	76 36 23.05	7,244

YORKTOWN QUADRANGLE—Continued.

From Primary Traverse Station No. 4 northwest to Primary Traverse Station No. 3, thence south to Primary Traverse Station No. 8.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. No. 4 (previously described)	37	09	11.37	76	35	31.34	.....
Old earthworks, 2.19 miles southwest and 0.8 mile west of, at Milstead's farm, 100 feet southwest of farmhouse, in angle of wire fence; iron post stamped "Prim. Trav. Sta. No. 3. Elev. 25, 1918"	37	09	35.83	76	36	12.78	4,172
Mulberry Island post office, 2.17 miles northwest, thence 0.41 mile west of, about 1,000 feet east of bank of river, in northwest corner of crossroads, 400 feet west of farmhouse; iron post stamped "Prim. Trav. Sta. No. 7. Elev. 7, 1918"	37	09	05.15	76	36	33.47	3,525
Primary Traverse Station No. 8 (previously described)	37	08	36.35	76	36	16.97	3,200

From Primary Traverse Station No. 5 via Shipyard Landing to Primary traverse Station No. 3. (By J. C. Fales and J. J. Phelan in 1918.)

Prim. Trav. Sta. No. 5	37	09	11.84	76	34	30.42	.....
Shipyard Landing, east of junction of Warwick River and Stony Run, on top of knoll, in midst of grove of pine trees; iron post stamped "Prim. Trav. Sta. No. 24, 1918"	37	08	36.56	76	33	52.71	4,695
Warwick Courthouse, about 1 mile north of, on east side of Newport News-Williamsburg road, opposite T road west to Shipyard Landing; iron post stamped "Prim. Trav. Sta. No. 25 P, 1918"	37	08	57.42	76	33	11.16	3,967
Road forks	37	09	26.40	76	33	24.14	3,113
Warwick Courthouse, about 2.5 miles north of, on east side of Newport News-Williamsburg road, 100 feet north of T road east; iron post stamped "Prim. Trav. Sta. No. 29 P, 1918"	37	09	54.33	76	33	22.91	2,826
Road forks on Reservoir dam	37	10	16.23	76	33	39.46	2,589
Prim. Trav. Sta. No. 3	37	10	37.08	76	34	11.71	3,361

From Grove triangulation station via highways to Primary Traverse Station No. 3 at old earthworks. (By J. J. Charters in 1918.)

Grove triangulation station (previously described)	37	12	30.07	76	37	56.66	.....
James River, 50 feet east of east shore of, east side of road, 1 foot out of ground, granite block	37	11	52.81	76	37	24.38	4,586
James River, about 1,700 feet east of, at road forks; iron post stamped "Prim. Trav. Sta. No. 17, 1918 C"	37	11	52.25	76	37	02.19	1,797
Crossroads	37	11	54.75	76	36	39.92	1,820
T road west	37	11	27.48	76	36	18.97	3,239
T road southwest	37	11	13.02	76	36	04.32	1,885
Skiffs Creek, on north bank of, 10 feet north of water line, 50 feet west of cedar tree and 50 feet south of oak tree with dead top; iron post stamped "Prim. Trav. Sta. No. 18, 1918 C"	37	10	40.78	76	36	14.94	3,374
Old earthworks, Prim. Trav. Sta. No. 3	37	10	37.08	76	34	11.71	.....

From Primary Traverse Station No. 7 along highways to Primary Traverse Station No. 3.

Prim. Trav. Sta. No. 7 (previously described)	37	13	02.90	76	37	22.39	.....
Morning Star Church, in triangular patch of grass, at T road south; iron post stamped "Prim. Trav. Sta. No. 14, 1918 C"	37	12	23.48	76	36	19.11	6,486
T road south	37	11	56.61	76	35	58.25	3,199
Crossroads, on south side of road, near wire fence; iron post stamped "Prim. Trav. Sta. No. 16, 1918 C"	37	11	47.12	76	35	34.74	2,129

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YORKTOWN QUADRANGLE—Continued.

MULBERRY ISLAND.

Along highways. (By J. C. Fales in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T road, hub 2 by 4 inches with copper nail and washer (on line from Crawford to Prim. Trav. Sta. No. 3)	37	08	25.06	76	36	15.23	
Road T, 700 feet south of "Collosial" Baptist Church; iron post stamped "Elev. 4. Prim. Trav. Sta. No. 10, 1918"	37	08	06.99	76	36	07.63	1,929
Road fork south, opposite and on north side of fork, hub with 10-penny nail	37	07	52.74	76	36	17.52	1,648
Road fork in gore of fork; iron post stamped "Elev. 8. Prim. Trav. Sta. No. 15, 1918"	37	07	32.32	76	36	20.01	2,075
T road west, east edge of road at	37	07	22.38	76	36	07.31	1,438
Footbridge crossing creek, south end of	37	07	05.11	76	36	10.69	1,768
On south side of road; iron post stamped "Prim. Trav. Sta. No. 17, 1918. Elev. 9"	37	07	08.00	76	36	26.15	1,285
Bridge 12 by 12 feet, without railing (the western one of two bridges on parallel roads 20 feet apart), south end of	37	07	33.78	76	36	42.33	2,918
Right angle in cornfield road, near clump of trees in open field; iron post stamped "Elev. 8. Prim. Trav. Sta. No. 16, 1918"	37	07	26.15	76	36	54.56	1,255
Crawford triangulation station (U. S. C. & G. S.)	37	07	43.89	76	37	12.42	2,304
Closure error			.00			+.04	
Prim. Trav. Sta. No. 10 (previously described)	37	08	06.99	76	36	07.63	
T farm road west	37	07	52.98	76	35	56.41	1,684
T road to large farm house 800 feet east, on west side of road; iron post stamped "Elev. 10. Prim. Trav. Sta. No. 12, 1918"	37	07	40.93	76	35	40.55	1,772
Mulberry Island post office, northeast corner of road T at; iron post stamped "Elev. 7. Prim. Trav. Sta. No. 14, 1918"	37	07	21.91	76	35	17.20	2,698
Brick yard, 200 feet northwest of northwest corner of; iron post stamped "Elev. 10. Prim. Trav. Sta. No. 13, 1918"	37	07	28.26	76	34	51.58	2,205
"Jut-out" toward Warwick River, northeast corner of, hub with copper nail witnessed by 2 blazed 8-inch yellow-pine trees, respectively 35 feet due south and 30 feet due west	37	07	51.66	76	34	55.90	2,292
Old earthworks, northwest corner of excavated ditch around	37	07	55.13	76	35	12.36	1,377
T road; iron post stamped "Elev. 12. Prim. Trav. Sta. No. 9, 1918"	37	08	12.05	76	35	24.56	1,974
Road fork (two woods roads)	37	08	15.99	76	35	40.75	1,369
White farm house 60 feet east of road, wooden wagon gate at entrance, road opposite and 15 feet west of	37	08	28.80	76	35	40.07	1,297
T of woods roads	37	08	38.73	76	35	43.17	1,034
Prim. Trav. Sta. No. 6 (previously described)	37	08	58.09	76	35	58.58	2,330
Closure error			+.04			−.10	
Mulberry Island post office, Prim. Trav. Sta. No. 14 (previously described)	37	07	21.91	76	35	17.20	
Mulberry Island post office, 1.94 miles southeast of, in west end of grass triangle formed by roads in three directions; iron post stamped "Prim. Trav. Sta. No. 18, 1918. Elev. 6"	37	06	58.74	76	35	08.44	2,446
45° angle to west in road, on outside of curve, hub with copper nail	37	06	47.05	76	35	34.25	2,400
Metal wagon gate at east entrance to white farm buildings, 40 feet west of; iron post stamped "Elev. 6. Prim. Trav. Sta. No. 19, 1918"	37	06	51.72	76	35	54.38	1,698
Footbridge crossing creek (previously listed)	37	07	05.11	76	36	10.69	1,893
Prim. Trav. Sta. No. 18 (previously listed)	37	06	58.74	76	35	08.44	
Road fork east	37	06	55.85	76	35	07.61	300
Road fork east	37	06	51.41	76	35	07.30	449
T road west at old store, hub at east edge of road	37	06	48.54	76	35	07.25	290
Small white house with green trimmings, 200 feet south of, on west edge of road, hub with copper nail	37	06	37.15	76	35	00.64	1,270
Mulberry Island post office, 2.58 miles southeast of, 20 feet north of road, 30 feet east of lane, inside of wire fence; iron post stamped "Prim. Trav. Sta. No. 21, 1918. Elev. 9"	37	06	22.29	76	34	43.19	2,064
Hub with copper nail, 12 feet north of woven-wire fence, 165 feet east of wooden gate in rail fence	37	06	30.52	76	34	25.46	1,660
Unpainted house on bank of Warwick River, 200 feet east of; iron post stamped "Elev. 9. Prim. Trav. Sta. No. 22, 1918"	37	06	40.87	76	34	09.66	1,654
Log culvert over drainage ditch, at entrance to Jesse Nettle's farm, hub 20 feet east of	37	07	08.54	76	34	35.26	3,484
Prim. Trav. Sta. No. 18 (described above)	37	06	58.74	76	35	08.44	2,843
Prim. Trav. Sta. No. 21 (described above)	37	06	22.29	76	34	43.19	
Mulberry Island post office, 3.14 miles southeast of, at forks of lane, 60 feet north of road, 40 feet east of lane, 10 feet south of wire fence; iron post stamped "Prim. Trav. Sta. No. 23, 1918. Elev. 8"	37	05	59.81	76	34	16.40	3,143
Road T, hub at southwest corner of	37	06	00.57	76	34	07.94	690
Angle in road near Campbell farm, hub about 75 feet north of	37	05	45.73	76	33	43.20	2,504
Mulberry Island post office, 3.76 miles southeast of, on south edge of road, near end of island, 3 feet south of gatepost, 2 feet west of wire fence; iron post stamped "Prim. Trav. Sta. No. 25, 1918. Elev. 7"	37	05	33.70	76	33	55.12	1,553
Prim. Trav. Sta. No. 23 (described above)	37	05	59.81	76	34	16.40	3,153
T road west (previously listed)	37	06	48.54	76	35	07.25	

YORKTOWN QUADRANGLE—Continued.

MULBERRY ISLAND—Continued.

Along highways—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Hub with copper nail, 6 feet north of barbed wire fence, 150 feet east of fence corner, at northwest corner of plowed field	37	06	30.99	76	35	12.50	1,824
South end of pine grove; iron post stamped "Elev. 4. Prim. Trav. Sta. No. 20, 1918"	37	06	12.26	76	35	01.12	2,105
Hub 200 feet south of white house with green trimmings (previously listed)	37	06	37.15	76	35	00.64	2,518
Hub near northwest corner of plowed field (described above)	37	06	30.99	76	35	12.50	.....
Unpainted fishermen's huts, 100 feet north of; iron post stamped "Prim. Trav. Sta. No. 19½, 1918"	37	06	22.88	76	35	44.21	2,697
Hub 12 feet north of woven-wire fence (previously listed)	37	06	30.52	76	34	25.46	.....
Red brick house on "Water View farm," at wagon gate in picket fence at entrance to; iron post stamped "Elev. 11. Prim. Trav. Sta. No. 24, 1918"	37	06	14.30	76	33	51.96	3,171
Hub at southwest corner of road T (previously listed)	37	06	00.57	76	34	07.94	1,900
Prim. Trav. Sta. No. 25 (previously listed)	37	05	33.70	76	33	55.12	.....
T road west	37	05	21.41	76	33	37.89	1,869
Road T, 900 feet northwest of two-story white building; iron post stamped "Elev. 8. Prim. Trav. Sta. No. 26, 1918"	37	05	13.99	76	33	28.44	1,072
Unpainted shacks at south end of island, near gate at entrance to; iron post stamped "Elev. 7. Prim. Trav. Sta. No. 27, 1918"	37	04	52.42	76	33	08.08	2,736
Prim. Trav. Sta. No. 25 (described above)	37	05	33.70	76	33	55.12	5,654

Along highways. (By J. J. Phelan in 1918.)

Prim. Trav. Sta. No. 25	37	08	57.42	76	33	11.16	.....
T road west	37	08	36.53	76	32	53.21	2,566
Warwick courthouse, in front wall of, 3 feet from ground; aluminum tablet stamped "Prim. Trav. Sta. No. 26 P, 1918. Elev. 36"	37	07	47.21	76	32	32.76	5,257
George N. Sykes's residence, in northeast corner of yard of, on south side of T road and on west side of main Newport News-Williamsburg road from Denbigh post office to Mennonite colony; iron post stamped "Prim. Trav. Sta. No. 27 P, 1918"	37	07	38.54	76	32	22.00	1,237
Crossroads, center of, nail in hub	37	07	30.88	76	32	44.57	1,537
T road north	37	07	29.50	76	33	14.78	2,450
T road south, 18 feet northwest from mail box marked "P. W. O."; nail in hub	37	07	28.35	76	33	27.60	1,050
Road forks, in center of; nail in hub	37	07	29.82	76	33	48.60	1,700
Hoops machine shop, 30 feet west of, 2.5 feet east of gatepost, on north side of road; nail in hub	37	07	26.01	76	34	06.10	1,440
Center of road, 8 feet northwest from farm road; nail in hub	37	07	43.27	76	33	52.60	2,060
Henry Schelley's residence, in corner of field, 5 feet west of center of road where wood road leaves farm road; iron post stamped "Prim. Trav. Sta. No. 23 P, 1918"	37	08	04.78	76	34	22.32	3,245
Hub in ground 17 feet north of tree marked "P. T. 17 feet," and 19 feet east of tree marked "P. T. 19 feet"	37	08	11.50	76	34	14.51	930
Hub with nail 6.4 feet south of large oak tree marked "P. T. 6.4"	37	08	29.28	76	33	51.71	2,577
Prim. Trav. Sta. No. 24	37	08	36.56	76	33	52.71	750

Spur line along highways.

Jesse Nettler's residence, 70.9 feet southwest from chimney of, 46.2 feet south from nail in 5-inch walnut tree, and 28.6 feet north from nail in 6-inch pine tree; iron post stamped "Prim. Trav. Sta. No. 22 P, 1918"	37	07	02.21	76	33	36.76	.....
Mohea, about 0.75 mile northeast of, northwest corner of crossroads, in field about 3 feet from fence line; iron post stamped "Prim. Trav. Sta. No. 21P, 1918"	37	06	36.82	76	32	45.86	7,077
Menchville, about 0.75 mile northwest of, in field at northeast corner of junction of Cedar road and Youngs road; iron post stamped "Prim. Trav. Sta. No. 20 P, 1918"	37	05	34.98	76	32	04.98	3,037

Southeast along highways near north border of quadrangle. (By J. J. Charters in 1918.)

Prim. Trav. Sta. No. 7 (previously located)	37	13	02.90	76	37	22.39	.....
Near T road bearing west, on root of white oak tree near mail box (Lincoln Orange) U. S. temporary bench mark	37	12	48.42	76	37	10.06	1,770
U. S. temporary bench mark marked "76.6"	37	12	31.79	76	36	48.53	2,421
Near T road south, on south side of road, near mail box of C. C. Cole, U. S. bench mark marked "63.3 Elev"	37	12	25.09	76	36	35.49	1,253

YORKTOWN QUADRANGEL—Continued.

Southeast along highways near north border of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Near Morning Star Church, in triangular patch of grass at intersection of two roads; iron post stamped "Prim. Trav. Sta. No. 14, 1918 C. Elev. 53.8"	37	12	23.47	76	36	19.10	1,336
T road bearing north and south, intersection of center line south.	37	11	56.60	76	35	58.25	3,198
At crossroads north and south and east and west, on south side of road, near wire fence; iron post stamped "Prim. Trav. Sta. No. 16, 1918 C"	37	11	47.12	76	35	34.75	2,129
Skiff's Creek, station 296, first point on north side	37	11	01.00	76	35	04.90	5,253
Skiff's Creek, station 297, second point on north side	37	10	59.37	76	35	07.40	260
Skiff's Creek, station 298, on south shore	37	10	54.38	76	34	59.07	842
Tie point, station 303, on line from Grove triangulation station .	37	10	36.21	76	34	58.41	1,838
Angle in road, 110 feet south of junction of T road northeast, on east side of road, 1 by 2 inch wooden stake	37	10	35.92	76	34	46.47	970
Forks of Y road to Newport News and Williamsburg and Mulberry Island road; iron post stamped "Prim. Trav. Sta. No. 30 P, 1918"	37	10	37.08	76	34	11.71	2,819

East along highways near north border of quadrangle. (By J. J. Charters in 1918.)

On Yorktown road near Charlos Corner; U. S. permanent bench mark No. 10 (previously computed)	37	14	48.64	76	37	08.55	.....
Halsteads Point, 2.5 miles northwest of, top of north end head wall of concrete culvert over small creek; chiseled square marked "U. S. B. M. 39.2"	37	14	40.14	76	36	39.17	2,526
Halsteads Point, 2.25 miles northwest of, 0.25 mile east of small creek, 350 feet west of dim road crossing highway, 4 feet from telephone pole 2593, at break of hill, top of 4-inch pine stake; copper nail and washer, marked "U. S. B. M. 87.4"	37	14	32.67	76	36	26.67	1,262
T road east, intersection of center line south	37	14	31.88	76	36	19.56	580
Halsteads Point, 1.8 miles northwest of, on north side of Williamsburg-Yorktown road, on east side of T road north; iron post stamped "Prim. Trav. Sta. 12 P, 85 1918," corner fence post marked "U. S. P. B. M. 85.1"	37	14	24.65	76	36	01.10	1,662
Halsteads Point, 1.5 miles northwest of, top of south end of stone pipe culvert, telephone pole 20 feet west marked "U. S. 82.4"	37	14	12.37	76	35	50.90	1,491
T road west, intersection of center line south	37	14	08.78	76	35	47.48	455
Halsteads Point, 1.2 miles northwest of, on summit of low ridge, on south side of road, opposite T road north, in root of 40-inch oak tree; copper nail and washer, tree marked "U. S. B. M. 82.9"	37	14	01.94	76	35	34.10	1,284
Halsteads Point, 0.9 mile northwest of, on south side of road, at T road north, in root of 15-inch pine tree; 40-penny wire nail, tree marked "U. S. 77.3"	37	13	54.10	76	35	19.80	1,397
U. S. temporary bench mark marked "82.0," 13 feet west of center of road	37	13	48.76	76	35	05.04	1,309
Temporary bench mark 14.1 feet east of road	37	13	48.22	76	34	53.65	922
T road west, intersection in center of road south	37	13	49.17	76	34	43.20	849
Halsteads Point, 0.25 mile west of, at T road north, at telephone pole 2679, top of 3-inch stake; wire nail, pole marked "U. S. 83.1"	37	13	49.45	76	34	39.16	328
Halsteads Point, at intersection of three roads; Yorktown, Williamsburg, and Newport News, near Goodrich guidepost, in triangular grass plat; iron post stamped "Prim. Trav. Sta. No. 13, 1918 C Elev. 87"	37	13	43.63	76	34	24.13	1,350

Magnetic declination for north border of quadrangle, 5.4° W.

West along highways near north border of quadrangle. (By J. J. Phelan in 1918.)

Yorktown monument, U. S. Coast & Geodetic Survey triangulation station, center of shaft	37	14	00.23	76	30	18.84	.....
Yorktown, in front wall of old customhouse, 22 feet southwest of road crossing, U. S. G. S. bench mark	37	14	05.24	76	30	28.62	939
Yorktown, road crossing, hub in center of road, 100 feet northwest of courthouse, 25 feet north of Yorktown road	37	14	09.27	76	30	33.86	587
Road, 29 feet south of edge of, 30 feet southeast from edge of bridge; nail in hub	37	14	20.67	76	30	48.37	1,645
Yorktown, 1.6 miles west of, at crossroads, at fork of Dabney road, 80 feet north-northwest of pine tree marked with white paint; iron post stamped "Prim. Trav. Sta. No. 33 P, 1918. Elev. 69"	37	13	58.01	76	31	57.03	6,006
Road forks	37	14	02.61	76	32	25.96	2,386
Yorktown, 2.35 miles west of, in southwest corner of T lane south through woods; iron pipe 2 inches in diameter with cap on top painted white; top of cap marked "U. S. 75.5 B. M."	37	13	58.83	76	32	43.90	1,500

YORKTOWN QUADRANGLE—Continued.

West along highways near north border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Yorktown, 2.51 miles west of, 70 feet east of front entrance of Rising Sun Church, in northeast corner at T road north, in south root of 5-foot jack-oak tree; copper nail and washer, painted "U. S. 76.9 B. M."	37 13 56.17	76 32 53.48	819
T road, 50 feet southwest of, U. S. 85.5 B. M., on pine tree on east side of road	37 13 49.88	76 34 07.90	6,052
Prim. Trav. Sta. No. 13 C, Halsteads Point (described above)	37 13 43.63	76 34 24.13	1,456

Magnetic declination for north border of quadrangle, 5.6° W.

East along highways near center of quadrangle. (By J. J. Charters in 1918.)

Prim. Trav. Sta. No. 14 (previously described)	37 12 23.47	76 36 19.10	.....
Lebanon Church, 1.6 miles southwest of, in southwest angle of crossroads, at north end of a grove of black-locust trees, at entrance to old farmhouse, top of 2 by 4 inch stake; copper nail and washer, tree 50 feet southwest marked "U. S. B. M. 46.1"	37 12 25.58	76 36 36.16	320
T road north, intersection of roads	37 12 27.36	76 35 57.30	1,537
Lebanon Church, 1.4 miles southwest of, 800 feet west of Blows Mill Run, at break of hill, on south side of road, 1 foot from fence post, top of 3-inch stake; copper nail and washer, post marked "U. S. 52.0"	37 12 28.72	76 35 51.76	470
Lebanon Church, 1.0 mile southwest of, 40 feet south of Chesapeake & Ohio Ry. track, on east side of road, top of 7-inch oak stake; copper nail and washer, telegraph pole 10 feet south marked "U. S. B. M. 49.3"	37 12 32.07	76 35 17.08	2,826
Lebanon Church, 0.5 mile west of, on north side of road, at T road north, top of 14-inch pine stump; copper nail and washer, tree 40 feet west marked "U. S. B. M. 84.3"	37 12 47.41	76 34 46.38	2,929
T road northeast, intersection of center line south	37 12 47.01	76 34 32.50	1,124
Lebanon Church, in southeast corner of lot, northwest corner at junction of first-class T road bearing west, about 20 feet from sign of Warwick Hotel; iron post stamped "Prim. Trav. Sta. No. 15 C, 1918"	37 12 45.78	76 34 19.44	1,064

South along highways near center of quadrangle. (By J. J. Phelan in 1918.)

Halsteads Point, Prim. Trav. Sta. No. 13 C, 1918 (previously described)	37 13 43.63	76 34 24.13	.....
Road fork, 33 feet from telephone pole 2736, 6 feet east of road bank, 20 feet southwest from stump on road bank, marked "U. S. B. M."	37 12 55.41	76 34 15.57	4,926
Lebanon Church, Prim. Trav. Sta. No. 15 C, 1918 (described above)	37 12 45.78	76 34 19.44	1,023
T farm road	37 12 01.37	76 34 24.34	4,509
Water tank, 150 feet southeast of, at T road in Lee Hall road going to depot, in southeast corner of lot; iron post stamped "Prim. Trav. Sta. No. 31 P, 1918"	37 11 40.30	76 34 18.86	2,177
Hub with nail, 44 feet from telephone pole 2804 AA, 21.9 feet from gatepost east of road, 24.6 feet from cedar tree on west side of road, 30.7 feet from cedar tree on east side of road, 15 feet from barbed-wire fence	37 11 37.37	76 34 18.31	399
Hub in center of tracks	37 11 32.46	76 34 18.42	498
Telephone pole 2809, 20 feet from, 100 feet from railroad crossing, near ordnance material storeroom and truck park	37 11 31.45	76 34 18.46	102
Crossroads, 50 feet south of T. H. Fleming's store door, 25 feet east of sweet-gum tree, 35 feet from telephone pole 2828; hub with nail	37 11 07.45	76 34 19.83	2,429
Prim. Trav. Sta. No. 30 P, 1918 (previously described)	37 10 37.08	76 34 11.71	3,142

Magnetic declination for center of quadrangle, 5° 26′ W.

Along highways. (By J. J. Charters in 1918.)

Prim. Trav. Sta. No. 16 (previously described)	37 11 47.12	76 35 34.75	.....
Station 286, 14.22 feet from 2-inch iron pipe (landmark), 2 by 4 inch wooden hub	37 11 30.94	76 35 28.62	1,710
In southeast corner of clearing, about 250 feet east of brown painted house of F. C. Lee, about 15 feet west of wooden gate; wooden stake with nail in top	37 11 12.50	76 35 19.27	2,013
Station 296, north side of Skiffs Creek	37 11 01.00	76 35 04.90	1,645

YORKTOWN QUADRANGLE—Continued.

Near Skiffs Creek.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. No. 18, on north side of Skiffs Creek (previously described)	37	10	40.78	76	36	14.94	
Station 421, on south shore of Skiffs Creek; stake in ground with nail in top	37	10	37.99	76	35	56.23	1,540
Station 431, 5 feet east of white witness flag; stake in ground with nail in top	37	10	33.13	76	35	36.11	1,702
Station 437, 4 feet north of center of road, 220 feet southeast of sawdust pile; stake	37	10	37.12	76	35	17.62	1,550
Station 303 (tie point)	37	10	36.21	76	34	58.41	1,558
Railroad azimuth (Chesapeake & Ohio), by J. J. Phelan, at Oriana (observed), 147° 47′ 57″; at Lee Hall, 147° 49′ 00″. One mile south of Williamsburg, by J. J. Charters, at Prim. Trav. Sta. No. 1, 134° 34′ 35″; at Grove station, 105° 00′ 48″(?); 50 feet from line post of York and James counties, 134° 15′ 50″.							

From Lee Hall east and north along highways. (By J. J. Phelan in 1918.)

Hub with nail, 44.1 feet from telephone pole 2804 AA (previously described)	37	11	37.37	76	34	18.31	
T road left (north)	37	11	35.00	76	33	57.20	1,729
Lee Hall, 1.3 miles east of, on north side of road, opposite road south, 15 feet north of pine tree painted "U. S. 40.6 B. M."; iron post stamped "Prim. Trav. Sta. No. 35 P, 1918"	37	11	34.48	76	33	27.60	2,395
T road left (north), hub with nail about 4 inches high from ground	37	11	20.81	76	33	03.76	2,373
Nail in root of blazed tree, 8 feet east of tree	37	11	30.38	76	32	38.29	2,277
Lee Hall, 2.64 miles east of, about 500 feet east of small swampy drain south, in center of fork of woods road, in south root of pine tree 1.6 feet in diameter; iron nail and copper washer, painted "U. S. 38.9 B. M."	37	11	34.38	76	32	12.89	2,095
Center of road, 7 feet from large pine tree marked "44.0"; nail in hub	37	11	34.94	76	32	03.43	767
Center of road, 4 feet southeast of pine tree marked "35.2"; nail in hub	37	11	36.68	76	31	54.37	753
Hub near foot of upturned pine tree	37	11	40.43	76	31	48.24	624
T road south	37	11	41.48	76	31	42.26	495
Intersection of T roads, hub with nail	37	11	43.58	76	31	37.83	416
Lee Hall, 3.3 miles east of, about 300 feet west of wooden bridge over Great Run, on north side of road forks, blazed pine tree 1.5 feet in diameter, in south root of; iron nail and copper washer, painted "U. S. 41.4 B. M."	37	11	43.74	76	31	32.77	409
Intersection of T road, 30 feet from, "41.8" painted in white on pine tree; hub with nail	37	11	48.65	76	31	39.43	733
Lee Hall, 2.1 miles northeast of, 0.1 mile south of York and Warwick county line, directly opposite T road northeast, on south side of road; iron post stamped "Prim. Trav. Sta. No. 34 P, 1918. Elev. 52"	37	12	08.22	76	32	10.46	3,197
Lee Hall, 2.5 miles northeast of, in northeast corner of T road north, in north root of walnut tree 2.3 feet in diameter; iron nail and copper washer, painted "U. S. 50.8 B. M."	37	12	25.25	76	31	58.34	1,981
Center of T road, 50 feet north of gatepost with heavy chains; hub with nail	37	12	48.06	76	31	47.30	2,473
Bridge, point 6 feet upstream	37	12	50.10	76	31	45.62	247
Opposite T road east	37	13	06.95	76	31	46.40	1,705
T road west, on east side of road, hub with nail	37	13	13.88	76	31	42.35	774
Yorktown, 1.4 miles southwest of, about 400 feet west of road forks, on west side of road 200 feet west of white frame house, in north root of pine tree 1.8 feet in diameter; iron nail and copper washer, painted "U. S. 67.2 B. M."	37	13	17.58	76	31	39.24	450
T road west, 10 feet south of pine tree marked "61"	37	13	20.28	76	31	40.37	288
Intersection of T road east, nail in hub	37	13	19.29	76	31	53.54	1,070
Five feet west of 15-inch pine tree, hub with nail	37	13	25.02	76	32	05.57	1,134
Yorktown, 1.7 miles southwest of, 0.15 mile east of N. Dabney's farm residence, 50 feet east of road forks, on north side of road, in south root of pine tree 1.4 feet in diameter; iron spike, painted "U. S. 67.4 B. M."	37	13	25.19	76	32	11.00	440
Ten feet east of 20-inch pine tree, hub with nail	37	13	29.25	76	32	12.38	426
Fifteen feet from pine tree with faded trespass sign, hub with nail	37	13	30.91	76	32	13.47	190
Yorktown, 1.7 miles southwest of, on west side of road, 25 feet north of gateway through lane leading to M. Dabney's farm residence; iron post stamped "Prim. Trav. Sta. No. 32 P, 1918. Elev. 69"	37	13	30.75	76	32	19.36	477
T road	37	13	39.50	76	32	11.47	1,090
Prim. Trav. Sta. No. 33 P (previously located)	37	13	58.01	76	31	57.03	2,206

Magnetic declination along north border of quadrangle, 5° 28′ W.

YORKTOWN QUADRANGLE—Continued.

Near Grove triangulation station. (By J. J. Charters in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Grove triangulation station (previously described)	37	12	30.07	76	37	56.66	
4 by 4 inch wooden hub, on top of bank, at end of ravine leading from James River	37	12	26.63	76	37	50.05	644
Temporary bench mark in root of big pine tree	37	12	18.94	76	37	29.89	,810
Temporary bench mark, near road to southwest, at edge of woods, on stump. Elevation 35.5	37	12	09.92	76	37	27.52	936
James River, 50 feet east of east shore of, east side of road, 1 foot out of ground; granite block	37	11	52.81	76	37	24.38	1,748

South and west along highways. (By J. J. Phelan in 1918.)

Lee Hall, 3.3 miles east of, "U. S. 41.4 B. M.," (previously described)	37	11	43.74	76	31	32.77	
Center of bridge over Great Run	37	11	43.86	76	31	28.44	352
T road intersection; hub with nail	37	11	48.36	76	31	18.25	942
T road to left	37	11	50.22	76	31	09.68	719
50 feet east of road fork, 10 feet west of pine tree; hub	37	11	08.37	76	31	04.51	4,255
35 feet southeast from gatepost with faded hunting sign, 35 feet north-northeast of large oak tree, 5 feet from edge of ditch	37	11	03.37	76	30	57.00	792
South side of T road intersection; hub	37	11	00.01	76	31	06.96	874
60 feet north of road fork	37	10	49.93	76	31	08.59	1,027
T road	37	10	42.58	76	31	12.50	808
25 feet south of gate and wire fence, in southeast corner of T road, 2 miles east of bridge over reservoir; iron post stamped "Prim. Trav. Sta. No. 36 P, 1918"	37	10	37.81	76	31	51.17	3,165
40 feet north and west of base of engine, 35 feet southeast by east from tree, 2.5 feet west from water; hub with nail	37	10	33.57	76	31	57.38	430
T road left	37	10	25.83	76	31	52.86	793
T road	37	10	17.50	76	32	20.25	2,370
Lee Hall, 2.4 miles southeast of, in northwest corner of crossroads, in east root of sweet-gum tree 8 inches in diameter; iron nail and copper washer, painted "U. S. 40.2 B. M."	37	10	15.95	76	32	22.57	244
T road to right	37	10	14.02	76	32	25.83	328
T road, 15 feet south of mail box, 21 feet northeast of pine tree marked "U. S. 41.8 B. M."	37	10	01.83	76	32	29.81	1,275
T road to right, hub with nail	37	09	59.02	76	32	41.10	955
2.45 feet north of south rail, on north track of Chesapeake & Ohio Ry., 25 feet west of railroad-crossing sign, 20 feet east of cattle guard, in center of track; nail	37	09	54.60	76	33	01.52	1,171
Prim. Trav. Sta. No. 29 (previously located)	37	09	54.33	76	33	22.91	1,731
Water-tank tower of Newport News Water Supply Reservoir, at Reservoir station on Chesapeake & Ohio Ry	37	10	06.08	76	33	14.34	1,376

East along highways to Oriana. (Unchecked spur line.)

Prim. Trav. Sta. No. 27 P, 1918 (previously located)	37	07	38.54	76	32	22.00	
Oriana station, 500 feet north of, in center of railroad track, in westbound track, 25 feet southeast of railroad-crossing sign-board; spike	37	08	05.72	76	31	35.95	4,633
Nail in tie, in center of westbound track, about 800 feet northwesterly from previous position	37	08	12.41	76	31	41.21	800

Magnetic declination in northeast corner of quadrangle, 5° 33′ W.

TRIANGULATION STATIONS.

Yorktown quadrangle.

WARWICK COUNTY.

CAMP ABRAHAM EUSTIS.

The following geographic positions on North American datum were determined by primary traverse and are based upon Coast and Geodetic Survey triangulation station Crawford and U. S. Geological Survey primary traverse stations determined in 1918.

Azimuths and distances were obtained from inverse computations from previously determined latitudes and longitudes.

The work was done by F. J. McMaugh in 1919.

TOWER NO. 1, WARWICK COUNTY, VA.

Motor Transport School, 900 feet south of curve in road at; stake at center of site of steel observation tower 105 feet high.

[Latitude 37° 09′ 00.14″. Longitude 76° 35′ 20.94″.]

To station—	Azimuth.	Back azimuth.	Distance.
	° ′ ″	° ′ ″	*Log. meters.*
Tower No. 2	49 20 24	229 18 18	3.5549473
Tower No. 3	336 58 48	156 59 32	3.6640887
Tower No. 4	114 56 03	194 55 36	3.6305239
Tower No. 5	336 37 44	156 39 05	3.9226465
Tower No. 6	145 53 56	325 51 43	3.9854945

TOWER NO. 2, WARWICK COUNTY, VA.

Mulberry Point, 0.50 mile northeast of, 120 feet northeast of Coast and Geodetic Survey triangulation tablet in concrete post on shore rampart of old Fort Crawford; stake at center of site for steel observation tower.

[Latitude 37° 07′ 44.59″. Longitude 76° 37′ 11.23″.]

To station—	Azimuth.	Back azimuth.	Distance.
	° ′ ″	° ′ ″	*Log. meters.*
Tower No. 1	229 18 18	49 20 24	3.5549473
Tower No. 3	292 44 54	112 46 44	3.6910244
Tower No. 4	317 39 00	137 39 39	3.3817023
Tower No. 5	311 20 47	131 23 14	3.9058253
Tower No. 6	165 20 36	345 19 30	4.0287282

TOWER NO. 3, WARWICK COUNTY, VA.

Curtis Point, 1.90 miles northwest of, 0.60 mile east of main road on Mulberry Island, 200 feet east of site of farmhouse, on west bank of Warwick River; stake at center of site for steel observation tower.

[Latitude 37° 06′ 42.97″. Longitude 76° 34′ 07.86″.]

To station—	Azimuth.	Back azimuth.	Distance.
	° ′ ″	° ′ ″	*Log. meters.*
Tower No. 1	156 59 32	336 58 48	3.6640887
Tower No. 2	112 46 45	292 44 54	3.6910244
Tower No. 4	92 22 04	272 20 53	3.4635208
Tower No. 5	336 07 04	156 07 42	3.5729940
Tower No. 6	149 26 49	329 23 52	4.1526472

TOWER NO. 4, WARWICK COUNTY, VA.

Morrison Creek, 400 feet east of point at mouth of, 800 feet southwest of site of old farm buildings; stake at center of site for steel observation tower.

[Latitude 37° 06′ 46.85″. Longitude 76° 36′ 05.52″.]

To station—	Azimuth.	Back azimuth.	Distance.
	° ′ ″	° ′ ″	*Log. meters.*
Tower No. 1	194 55 36	14 56 03	3.6305239
Tower No. 2	137 39 39	317 39 00	3.3817023
Tower No. 3	92 22 04	272 20 53	3.4635208
Tower No. 5	308 40 53	128 42 41	3.7530488
Tower No. 6	160 21 48	340 20 03	4.1094106

TOWER NO. 5, WARWICK COUNTY, VA.

Curtis Point, near end of, 130 feet southeast of old gateway; stake at center of site for steel tower.

[Latitude 37° 04′ 52.00″. Longitude 76° 33′ 06.54″.]

To station—	Azimuth.	Back azimuth.	Distance.
	° ′ ″	° ′ ″	*Log. meters.*
Tower No. 1	156 39 05	336 37 44	3.9226465
Tower No. 2	131 23 14	311 20 47	3.9058253
Tower No. 3	156 07 42	336 07 04	3.5729940
Tower No. 4	128 42 41	308 40 53	3.7530488
Tower No. 6	150 50 47	330 47 13	4.2536414

TOWER NO. 6, WARWICK COUNTY, VA.

J. D. Dunn's house, about 500 feet southeast of, 0.25 mile south of main road, near ravine, 300 feet southeast of iron post stamped "Prim. Trav. Sta. No. 4"; stake at center of site for steel observation tower.

[Latitude 37° 13′ 19.87″. Longitude 76° 39′ 00.88″.]

To station—	Azimuth.	Back azimuth.	Distance.
	° ′ ″	° ′ ″	*Log. meters.*
Tower No. 1	325 51 43	145 53 56	3.9854945
Tower No. 2	345 19 30	165 20 36	4.0287282
Tower No. 3	329 23 52	149 26 49	4.1526472
Tower No. 4	340 20 03	160 21 48	4.1094106
Tower No. 5	330 47 13	150 50 47	4.2536414

TOWER NO. 3, WARWICK COUNTY, VA.

Curtis Point, 1.30 miles northwest of, 0.80 mile east of main road on Mulberry Island, 200 feet east of site of lighthouse, on west bank of Warwick River; stake at center of site for steel observation tower.

[Latitude 37° 00' 12.97". Longitude 76° 34' 02.80".]

To station—	Azimuth.	Back azimuth.	Distance.
	° ′ ″	° ′ ″	Log. meters.
Tower No. 1	156 36 32	336 36 48	3. 0648937
Tower No. 2	112 18 45	292 44 24	3. 0000944
Tower No. 4	202 32 01	272 30 33	3. 9933206
Tower No. 5	230 07 01	1 50 07 42	3. 8752040
Tower No. 6	148 26 49	330 24 52	4. 1330472

TOWER NO. 4, WARWICK COUNTY, VA.

Skiffes Creek, 400 feet east of point at mouth of, 800 feet southwest of site of old farm buildings; stake at center of site for steel observation tower.

[Latitude 37° 00' 18.87". Longitude 76° 36' 06.32".]

To station—	Azimuth.	Back azimuth.	Distance.
	° ′ ″	° ′ ″	Log. meters.
Tower No. 1	104 55 30	14 36 08	3. 0000320
Tower No. 2	132 30 36	312 39 09	3. 9917323
Tower No. 3	92 22 01	272 20 32	3. 9933206
Tower No. 5	208 40 51	1 28 41 44	3. 7529848
Tower No. 6	160 31 05	340 30 05	4. 1004100

TOWER NO. 5, WARWICK COUNTY, VA.

Curtis Point, near end of, 150 feet southeast of old gateway; stake at center of site for steel tower.

[Latitude 37° 00' 52.00". Longitude 76° 33' 06.31".]

To station—	Azimuth.	Back azimuth.	Distance.
	° ′ ″	° ′ ″	Log. meters.
Tower No. 1	156 36 05	336 36 44	3. 0000640
Tower No. 2	131 22 11	311 20 17	3. 9905252
Tower No. 3	156 07 42	336 07 04	3. 8752040
Tower No. 4	128 43 41	308 40 33	3. 7529848
Tower No. 6	150 40 47	330 47 18	4. 2290114

TOWER NO. 6, WARWICK COUNTY, VA.

J. D. Dunn's house, about 300 feet southeast of, 0.25 mile south of main road, near ravine, 300 feet southeast of iron post stamped "Trim. Tow. Sta. No. 4"; stake at center of site for steel observation tower.

[Latitude 37° 12' 19.87". Longitude 76° 29' 00.85".]

To station—	Azimuth.	Back azimuth.	Distance.
	° ′ ″	° ′ ″	Log. meters.
Tower No. 1	329 31 43	148 32 36	4. 0983486
Tower No. 2	316 19 30	136 20 36	4. 0282780
Tower No. 3	328 22 52	148 24 31	4. 1330472
Tower No. 4	340 29 08	160 31 46	4. 1004100
Tower No. 5	330 47 13	150 50 47	4. 2290114

ARIZONA AND CALIFORNIA.

TRIANGULATION STATIONS.

Oatman special quadrangle, Kingman and Mohave City 30′ quadrangles.

MOHAVE COUNTY, ARIZONA; SAN BERNARDINO COUNTY, CALIFORNIA.

Points located by L. F. Biggs in 1916, based on Cone and Peak triangulation stations, on approximate North American datum.

CONE No. 2, MOHAVE COUNTY, ARIZ.

A sharp rocky peak, well known as "The Boundary Cone," about 17 miles northeast of Needles, Calif. The road to Kingham via the Snowball mine passes by the base of the peak. To go to Cone from Needles, take road to Snow Ball mine, pass the Cone. Stop at the first big wash that the road crosses after passing the peak and go up the wash a short distance; the best and perhaps the only way up. Horses can not be taken much farther than the wash. There are several springs within 2 or 3 miles of the station. Plenty of water at Leland mine about 3 miles a little west of north of station.

Station mark: A bronze triangulation tablet wedged in solid rock, about 2 inches under ground, under center of a cairn 7 feet high.

[Latitude 34° 59′ 01.39″. Longitude 114° 24′ 54.54″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Sphinx	333 32 18.97	153 36 43.44	4.4215004	.....
Knoll	49 51 22.25	229 44 04.98	4.4047806	.....
Hill	69 08 44.90	248 59 57.08	4.3985648	.....
Peak	95 48 47.00	275 39 14.25	4.4057480	.....
Powell	356 11 33.97	176 12 24.71	4.5321828	.....
Whale	19 26 32.62	199 22 08.57	4.5484345	.....

FORT MOHAVE, MOHAVE COUNTY, ARIZ.

Center of large water tank at Fort Mohave.

[Latitude 35° 02′ 39.450″. Longitude 114° 37′ 19.712.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Nutt Mount	258 53 52.89	79 03 10.35	4.3987610	15.564
Hardy	264 31 39.96	84 38 06.02	4.2333038	10.633
Monument 1679	277 09 39.32	97 16 21.01	4.2523358	11.109
Cone No. 2	289 31 09.76	109 38 17.32	4.3021699	12.460
Peak (Calif.)	56 59 53.71	236 57 28.21	3.8844803	4.762

HARDY, MOHAVE COUNTY, ARIZ.

On the highest point of Hardy Range, about 4 miles northwest of Oatman and about 0.5 mile west of the Jerome-Oatman mine. To reach station take road to Jerome-Oatman property, thence trail to mine, thence uphill.

Station mark: Tablet cemented in rock under center of cairn 7 feet high.

[Latitude 35° 03′ 31.888″. Longitude 114° 26′ 07.495″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Peak	76 12 24.55	256 03 33.15	4.3832724	15.018
Fort Mohave	84 38 06.02	264 31 39.96	4.2333038	10.633
Nutt Mount	247 10 50.94	67 13 42.23	3.9133976	5.090
Cone No. 2	347 29 01.64	167 29 43.51	3.9313729	5.305
Monument 1679	349 45 23.76	169 45 39.56	3.5937759	2.439

MONUMENT 1679, MOHAVE COUNTY, ARIZ.

A U. S. Mineral Location Monument No. 1679, on top of hill, just west of the old Leland mine.

Station mark: Not described.

NOTE.—The General Land Office tied to this station.

[Latitude 35° 01′ 26.568″. Longitude 114° 25′ 39.966″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fort Mohave	97 16 21.02	277 09 39.32	4.2523358	11.109
Hardy	169 45 39.56	349 45 23.76	3.5937759	2.439
Nutt Mount	224 14 15.95	44 16 51.36	3.9922916	6.104
Cone No. 2	345 33 27.15	165 33 53.21	3.6646055	2.870

NUTT MOUNT, MOHAVE COUNTY, ARIZ.

On the most western of four prominent points of Mount Nutt. From Oatman take road to Gold Roads Summit, thence follow old trail around ridge to station. This is not a very good trail, but horses can be ridden over it. Another route is to take trail up canyon, follow pipe lines to end, thence keep main canyon following all left-hand canyons till the uppermost spring is reached, where there is a small concrete head gate and an old camp site, thence turn to left uphill and follow an old burro trail to top of ridge, thence go north to station. It is not advisable to take horses beyond spring. There is a higher point about 0.75 mile east of station, but not visible from Hardy.

Station mark: A bronze tablet.

Signal and reference mark: A cairn 7 feet high with drill hole under center, 2.5 feet toward Hardy from tablet.

[Latitude 35° 05′ 14.885″. Longitude 114° 21′ 09.407″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cone No. 2	26 23 25.82	206 21 16.57	4.1087879	7.982
Monument 1679	44 16 51.36	224 14 15.95	3.9922916	6.104
Hardy	67 13 42.23	247 10 50.94	3.9133976	5.090
Peak	73 58 22.97	253 46 40.19	4.5090153	20.062
Fort Mohave	79 03 10.35	258 53 52.89	4.3987610	15.564

PEAK, SAN BERNARDINO COUNTY, CALIF.

A U. S. Coast and Geodetic Survey triangulation station on the highest peak of the foothills, 2 miles due west of Von Schmidt.

Station mark: A shallow hole drilled in top of a large irregular mass of hard rock set in ground.

[Latitude 35° 00′ 23.910″. Longitude 114° 41′ 33.211″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fort Mohave (1916)	236 57 28.21	56 59 53.71	3.8844803	4.762
Nutt Mount (1916)	253 46 40.19	73 58 22.97	4.5090153	20.062
Hardy (1916)	256 03 33.15	76 12 24.55	4.3832724	15.018
Cone No. 2 (Ariz., 1902)	275 39 14.25	95 48 47.00	4.4057480	15.816
Sphinx (1902)	305 05 22.51	125 19 18.28	4.6571412	.....
Knoll (1902)	342 31 30.78	162 33 45.08	4.2977878	.....
Hill (1902)	350 19 19.40	170 20 03.60	4.0663630	.....

CALIFORNIA.

TRIANGULATION STATIONS.

Burney, Dixie, Paynes Creek, Prattville, and Susanville quadrangles.

LASSEN, PLUMAS, SHASTA, AND TEHAMA COUNTIES.

During the season of 1916 triangulation was extended over the above-named quadrangles by Charles F. Urquhart.

Positions are on North American datum as derived from U. S. Coast and Geodetic Survey stations Bally, Round, and Lyons. Seventeen stations were occupied, 2 being primary stations, Lyons and Round, of the U. S. Coast and Geodetic Survey, and 13 points were located by intersections. Bally, a Coast and Geodetic Survey station, was resected on as a check. The final computations were made at the Sacramento, Calif., office.

ANTELOPE, LASSEN COUNTY, CALIF. (Not occupied.)

Highest point of prominent mountain, locally known as Antelope Peak or Campbell Peak. It is between the south end of Eagle Lake and Pine Creek Valley.

[Latitude 40° 35′ 33.848″. Longitude 120° 54′ 34.549″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pegleg	9 50 58.80	189 49 20.42	4.3197279	12.974
Red Cinder	69 32 09.01	249 19 01.21	4.4837507	18.928
Harvey	147 21 15.83	327 16 22.49	4.2917915	12.166

BALD MOUNTAIN, SHASTA COUNTY, CALIF.

On the highest point of Bald Mountain, a well-known peak, about 8 miles a little east of south of Fall River Mills, and immediately above and south of the Peterson and St. Johns ranches. The mountain is not bald as the name would suggest but was originally covered with pine timber from 1 to 3 feet on the stump. The timber was cut on highest point of mountain except a pine tree 40 or 50 feet high, which was trimmed and left for a signal. Timber was not cut on the east and west ends of mountain, but the signal tree is high enough to be seen over it. Animals can be ridden to

summit; the easiest approach is from the south, though it was ascended from the northwest in 1916.

Station mark: A triangulation tablet set in large rock on highest part of mountain and instrument set over tablet for observation.

Signal is 10.49 meters in direction of Fall River Mills from triangulation station. Position of tablet computed.

[Latitude 40° 54′ 03.984″. Longitude 121° 22′ 39.319″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
West Prospect	0 09 59.10	180 09 56.36	4.5324311	21.173
Lassen	13 11 45.34	193 06 48.02	4.6724888	29.231
Crater	42 08 21.94	221 58 55.80	4.4817026	18.839
Burney	63 40 24.74	243 30 36.47	4.3714053	14.613
Saddle	143 06 13.40	323 01 35.05	4.2181368	10.268
Fall River	156 54 55.89	336 52 36.06	4.1043250	7.901
McArthur	173 52 16.26	353 51 27.65	4.2099421	10.076
Pittville	192 03 23.36	12 05 02.39	4.2274765	10.491
Snell	205 57 02.26	25 59 21.91	4.0562255	7.073
Dixie	265 32 58.80	85 44 10.89	4.3818106	14.968
Harvey	301 26 18.29	121 39 45.37	4.5308599	21.096
Red Cinder	346 05 02.54	166 10 10.87	4.6655698	28.769
Prospect	355 40 43.18	175 41 59.44	4.5620381	22.667

BALLY, SHASTA COUNTY, CALIF.

A station of the U. S. Coast and Geodetic Survey, on the more northern of the two main peaks on the summit of Bally Mountain, a prominent and well-known mountain about 15 miles by road west of Redding, Calif. The station mark, described below, is in the top of a rock on the north side of the most prominent group of rocks on the peak and 5 or 6 feet below the top of the group. Station mark: A ¾-inch copper bolt, 3 inches long, cemented into a drill hole in the rock, and directly above the bolt in the same drill hole is cemented an old-type station mark. A cross in the top of the copper bolt and another in the polished center of the disk mark the station.

Reference marks: A drill or punch hole in the top of a ⅜-inch copper bolt, 3 inches long, which is leaded or cemented into a drill hole in a large rock with the top of the bolt flush with the surface. There are two such marks at the following distances and azimuths from the station: 29.69 meters, 126° 59′; and 20.22 meters, 332° 22′.

[Latitude 40° 36′ 11.939″. Longitude 122° 39′ 00.370″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Round	248 47 16.01	69 14 22.18	4.7972333	38.957
Snow	257 43 24.74	78 17 06.06	4.8719614	46.271
Crater	262 45 54.49	83 26 14.42	4.9440334	54.624
Lassen	277 06 14.50	97 50 56.09	4.9907799	60.832
Turner	290 42 40.44	111 22 55.57	4.9730552	58.399
Lyons	291 00 16.70	111 39 38.03	4.9649937	57.206
Inskip	295 34 26.22	116 01 59.83	4.8238630	41.420
Kent (C. & G. S.)	6 01 26.68	185 58 03.60	4.8514233	.....

BROKEOFF, SHASTA-TEHAMA COUNTY LINE, CALIF. (Not occupied.)

A small rock cairn on highest point of Brokeoff Peak, a prominent mountain about 4 miles southwest of Lassen.

[Latitude 40° 26′ 45.716″. Longitude 121° 33′ 31.669″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Turner	16 39 25.66	196 37 12.01	4.2304507	10.563
Lassen	224 22 13.87	44 24 21.32	3.8204344	4.110
Red Cinder	257 59 54.67	78 12 04.99	4.4327868	16.832
Butt	329 44 20.35	149 51 04.40	4.4667596	18.202

BURNEY, SHASTA COUNTY, CALIF.

Station is on the highest point of Burney Butte, a well-known mountain about 6 miles south-southeast of Burney post office. No way was found to ride to summit of this peak. The shortest and best route is probably from Burney spring on south side of mountain. Road from Hat Creek to Tamarack Flat passes this spring.

Signal: A rock cairn 6 feet at base and 6 feet high.

Station mark: A bronze triangulation tablet set in rock under center of cairn.

[Latitude 40° 48′ 24.889″. Longitude 121° 37′ 38.610″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Snow	62 24 00.38	242 17 41.34	4.1865539	9.548
Round	89 47 24.34	269 34 27.81	4.4448735	17.307
Saddle	205 05 55.34	25 11 06.23	4.4174010	16.246
Bald Mountain	243 30 36.47	63 40 24.74	4.3714053	14.613
Dixie	254 34 51.28	74 55 51.10	4.6697079	29.044
Harvey	278 06 41.95	98 29 55.58	4.7039186	31.424
Red Cinder	316 48 28.73	137 03 22.63	4.6740212	29.334
Prospect	317 16 21.80	137 27 24.31	4.5468666	21.889
West Prospect	318 15 13.99	138 24 57.70	4.4998303	19.642
Lassen	343 32 28.70	163 37 17.48	4.5664436	22.898
Crater	356 20 06.60	176 20 28.06	4.0818458	7.502

BUTT, TEHAMA COUNTY, CALIF.

Signal is on highest point of Butt Mountain, a well-known mountain at source of East Fork of Deer Creek and just north of Butt Creek at a point 6 miles below the source. There is a very good road from Chester, on the Red Bluff and Susanville road, to Deer Creek Meadows, where there is good pasture. Distance from Chester to Deer Creek Meadows about 10 miles. There is another road (not much used) from Morgan Springs to Deer Creek Meadows. A trail crosses the ridge from Deer Creek Meadows to Butt Creek, which can be used to meadow on summit of ridge; cross lower end of this meadow and go up most northern ridge leading west from peak. Animals were taken to summit in 1916.

This point was occupied by the Wheeler Survey in 1878, and a very good cairn was found standing. The new cairn was built in the same position.

Signal: A cairn about 8 feet high and 6 feet at base.

Station mark: A bronze triangulation tablet set under center of cairn.

[Latitude 40° 13′ 04.955″. Longitude 121° 23′ 07.376″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Colby	57 13 01.87	237 07 38.99	4.1488544	8.754
Lyons	113 21 37.23	293 11 46.79	4.3711283	14.604
Turner	114 46 21.34	294 37 24.56	4.3345578	13.425
Brokeoff	149 51 04.40	329 44 20.35	4.4667596	18.202
Lassen	161 27 32.21	341 22 55.13	4.5009723	19.693
Prospect	184 56 06.51	4 57 40.42	4.5979369	24.620
Red Cinder	200 53 11.92	20 58 36.28	4.5196298	20.558
Pegleg	240 09 17.40	60 26 07.53	4.6278285	26.374
Dyer	265 21 44.10	85 35 25.83	4.4796368	18.749
Keddie	270 07 51.00	90 24 01.20	4.5505945	22.077
Kettle	277 42 06.41	98 07 52.92	4.7577731	35.573

COLBY, TEHAMA COUNTY, CALIF. (Not occupied.)

Station is center of floor of tent used by U. S. Forest Service for lookout station.

Reference mark: A triangulation tablet set in rock 5.3 feet from southeast corner of tent, and 9.7 feet from northeast corner of tent.

[Latitude 40° 08′ 57.337″. Longitude 121° 31′ 27.782″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Turner	154 55 35.78	334 52 02.53	4.2648901	11.435
Lassen	182 35 38.89	2 36 25.79	4.5765499	23.437
Butt	237 07 38.99	57 13 01.87	4.1488544	8.754

CONE, SHASTA COUNTY, CALIF. (Not occupied.)

The highest point of prominent peak on north side of Battle Creek and north of Mr. Long's ranch on Red Bluff and Manton road. About 7 miles west-southwest of Shingleton.

[Latitude 40° 27′ 24.361″. Longitude 121° 59′ 56.731″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Round	185 10 57.36	5 12 34.94	4.5898083	24.163
Snow	209 13 45.66	29 21 58.77	4.5611916	22.623
Crater	230 06 40.77	50 21 32.57	4.6227303	26.066
Lyons	299 16 42.51	119 30 41.94	4.5450833	21.799
Inskip	339 18 11.37	159 20 23.56	4.1342037	8.463

COYOTE, LASSEN COUNTY, CALIF. (Not occupied.)

Station is a rock cairn on prominent mountain on east side of Mountain Meadows and 12 or 15 miles east of Westwood.

[Latitude 40° 17′ 25.131″. Longitude 120° 49′ 53.496″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Dyer	71 44 43.97	251 36 57.62	4.2542995	11.160
Red Cinder	123 08 45.80	302 52 38.30	4.6231468	26.091
Pegleg	141 55 02.34	321 50 22.30	4.2184094	10.274

CRATER, SHASTA COUNTY, CALIF.

Station is on the highest point of high mountain locally known as Magee Peak. The old Geological Survey map gives this point as Crater Peak, and the Coast Survey used the same name in 1904, consequently it has been retained. Animals can be ridden to within about 400 feet (elevation) of the summit on north side of mountain starting from Tamarack Flat. The U. S. Forest Service has a lookout on this mountain but no cabin has been built.

Signal: A rock cairn 6 feet at base and 7 feet high with small tree in center.

Station mark: A bronze triangulation tablet set in solid rock under center of cairn.

[Latitude 40° 41′ 54.271″. Longitude 121° 37′ 05.738″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lyons	2 18 38.79	182 17 49.91	4.6443176	27.395
Inskip	34 52 20.05	214 39 41.81	4.6828360	29.935
Cone	50 21 32.57	230 06 40.77	4.6227303	26.066
Bally	83 26 14.42	262 45 54.49	4.9440334	54.624
Snow	108 55 10.59	288 48 30.52	4.1821344	9.451
Burney	176 20 28.06	356 20 06.60	4.0818458	7.502
Saddle	196 06 58.37	16 11 47.41	4.5703853	23.107
Bald Mountain	221 58 55.80	42 08 21.94	4.4817026	18.839
Dixie	241 04 40.38	61 25 17.34	4.7041650	31.442
Harvey	264 18 52.05	84 41 42.70	4.6949513	30.782
West Prospect	299 38 35.70	119 47 57.35	4.3678633	14.495
Prospect	300 52 43.35	121 03 23.72	4.4305236	16.745
Red Cinder	305 21 04.94	125 35 36.45	4.5873406	24.027
Lassen	337 27 40.91	157 32 07.98	4.4017203	15.670
Turner	359 45 49.27	179 45 54.30	4.6465358	27.535

DE WITT, TEHAMA COUNTY, CALIF.

Station is on a point well known as De Witt Peak, on a ridge between Antelope and Mill creeks. It is about 7 miles east of Mr. D. B. Lyon's ranch in the Sacramento Valley, 7 or 8 miles east of Los Molinos on the Southern Pacific R. R. There is a road from Lyon's ranch to foot of hill.

Signal: A cairn 6 feet at base and 6 feet high with tree in center.

Station mark: A drill hole in solid rock under center of cairn.

[Latitude 40° 09′ 27.630″. Longitude 121° 56′ 46.127.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Inskip	180 52 56.22	0 53 4.85	4.3111148	12.719
Lyons	238 25 51.97	58 37 45.72	4.4861773	19.034

DIXIE, LASSEN COUNTY, CALIF.

Station is on a prominent hill about 2 or 3 miles north of the Clarke & Cox ranch in Dixie Valley, a well-known valley about 25 miles east-southeast of Fall River Mills. There is a good road from the latter place to the valley. The hill was covered with mahogany trees, which were cut down except one.

Signal: A mahogany tree standing alone, can be seen from the Clarke & Cox ranch.

Station mark: A bronze triangulation tablet set in rock under center of signal tree. Position of tablet computed.

[Latitude 40° 55′ 03.309″. Longitude 121° 05′ 33.022″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Crater	61 25 17.34	241 04 40.38	4.7041650	31.442
Burney	74 55 51.10	254 34 51.28	4.6697079	29.044
Bald Mountain	85 44 10.89	265 32 58.80	4.3818106	14.968
Saddle	108 40 23.36	288 24 32.07	4.5536808	22.235
Harvey	345 59 34.01	166 01 50.22	4.3052244	12.548

DYER, LASSEN AND PLUMAS COUNTY LINE, CALIF.

Station is on bald point at northwest end of ridge that has Dyer Peak at one end and Keddie Peak at the other. It is about 5 miles a little west of south from Westwood and about 5 miles east of Lake Almanor and is owned by the Great Western Power Co. It can be easily reached on horseback from almost any direction, but the top

of ridge between it and Keddie Peak is rather rough. This point was probably used by the Wheeler Survey in 1878, but no description appears in the report. A very good rock cairn was found standing, and station was rebuilt on exactly the same spot.

Signal: A rock cairn about 6 feet at base and 6 feet high having a fir tree in center.

Station mark: A bronze triangulation tablet set in solid rock under center of cairn.

[Latitude 40° 14′ 22.114″. Longitude 121° 01′ 55.040″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Butt	85 35 25.83	265 21 44.10	4.4796368	18.749
Turner	97 48 31.95	277 25 52.63	4.7001031	31.150
Lassen	124 44 25.11	304 26 03.94	4.6877907	30.279
Red Cinder	147 31 32.92	327 23 13.26	4.5293560	21.024
Pegleg	200 03 58.81	20 07 05.83	4.2980235	12.342
Coyote	251 36 57.62	71 44 43.97	4.2542995	11.160
Kettle	291 00 05.14	111 12 10.86	4.4550164	17.716
Keddie	295 02 00.65	115 04 29.35	3.7787835	3.734

FALL RIVER, SHASTA COUNTY, CALIF. (Not occupied. No check.)

Station mark: Steeple on church in town of Fall River Mills.

[Latitude 41° 00′ 23.120″. Longitude 121° 26′ 12.655″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Saddle	107 03 33.63	287 01 14.98	3.7129613	3.209
Bald Mountain	336 52 36.06	156 54 55.89	4.1043250	7.901

HARVEY, LASSEN COUNTY, CALIF.

On the highest point of Harvey Mountain, which is on the northeast side of Harvey Valley. The greater part of the valley is owned by Mr. D. B. Lyon, but the Forest Service has a small pasture at the Harvey Valley Station, which is in the southeast end of the valley and is 5 miles south of triangulation station. There is a good trail from the Forest Service station to summit of mountain, which is a lookout station, but there is no house on summit. The Forest Service station is about 32 miles from Westwood by road. The valley can be reached by road from Fall River Mills, also from Dixie Valley, but the latter road is not much better than a pack trail. The mountain is covered with timber except the rocky peak on summit, and there are a few tall trees on its side reaching about as high as summit of mountain.

Signal: A cairn 6 feet at base and 6 feet high.

Station mark: A nail set in solid rock under center of cairn.

There is a small fir tree over center of mark; position of mark computed.

[Latitude 40° 44′ 28.067″. Longitude 121° 02′ 04.698″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Red Cinder	33 26 34.22	213 18 18.28	4.5125597	20.226
Prospect	54 46 30.22	234 34 21.96	4.5076492	19.999
Lassen	54 56 41.21	234 38 20.66	4.6869818	30.223
West Prospect	60 50 31.38	240 37 04.07	4.5231887	20.727
Crater	84 41 42.70	264 18 52.05	4.6949513	30.782
Burney	98 29 55.58	278 06 41.95	4.7039186	31.424
Bald Mountain	121 39 45.37	301 26 18.29	4.5308599	21.096
Saddle	128 42 56.44	308 24 50.49	4.6962252	30.873
Dixie	166 01 50.22	345 59 34.01	4.3052244	12.548
Antelope	327 16 22.49	147 21 15.83	4.2917915	12.166
Kettle	337 50 29.75	158 02 45.49	4.8523500	44.228
Pegleg	349 14 12.85	169 17 27.11	4.5764747	23.433

INSKIP, TEHAMA COUNTY, CALIF.

Station is on highest point of Inskip Hill, a well-known point about 1 mile west of Paynes Creek post office on the Red Bluff and Susanville road. It can be easily reached with saddle animals.

Signal: A rock cairn 6 feet at base and 6 feet high with tree in center.

Station mark: A bronze triangulation tablet under center of cairn.

[Latitude 40° 20′ 31.214″. Longitude 121° 56′ 32.772″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
De Witt	0 53 04.85	180 52 56.22	4.3111148	12.719
Bally	116 01 59.83	295 34 26.22	4.8238630	41.420
Cone	159 20 23.56	339 18 11.37	4.1342037	8.463
Round	178 35 19.06	358 34 43.87	4.7116944	31.992
Snow	196 16 28.31	16 22 28.27	4.6661722	28.809
Crater	214 39 41.81	34 52 20.05	4.6828360	29.935
Lassen	246 13 15.08	66 30 17.79	4.6085032	25.226
Lyons	279 45 10.37	99 56 56.83	4.4176646	16.256

KEDDIE, LASSEN-PLUMAS COUNTY LINE, CALIF. (Not occupied.)

The highest point of Keddie Peak, which is about 5 miles north-northeast of Greenville post office and on south side of Mountain Meadows.

[Latitude 40° 12′ 59.616″. Longitude 120° 58′ 04.799″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Butt	90 24 01.20	270 07 51.00	4.5505945	22.077
Dyer	115 04 29.35	295 02 00.65	3.7787835	3.734
Red Cinder	142 49 26.65	322 38 38.02	4.5914659	24.256
Pegleg	183 44 25.62	3 45 03.64	4.3272192	13.200

KETTLE, PLUMAS COUNTY, CALIF. (Not occupied.)

A Forest Service cabin on Kettle Rock, about 10 miles northeast of Taylorsville.

[Latitude 40° 08′ 49.304″. Longitude 120° 43′ 10.531″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Butt	98 07 52.92	277 42 06.41	4.7577731	35.573
Dyer	111 12 10.86	291 00 05.14	4.4550164	17.716
Red Cinder	131 04 45.22	310 44 18.39	4.7725326	36.803
Pegleg	145 45 32.28	325 36 32.14	4.5442227	21.756
Harvey	158 02 45.49	337 50 29.75	4.8523500	44.228

LASSEN, SHASTA COUNTY, CALIF.

Station is the highest point of Lassen Peak. It can be reached from Mineral, Morgan, or Drakesbad by road and trail to timber line on the south side, thence by trail to summit. About 2,000 feet above timber line is rather steep to ride an animal, but a pack animal with about 90 pounds of instruments was taken to the summit. A constant issue of steam from the mountain interferes with view to the northwest, but it can be seen through from time to time. The part of the mountain from which steam, ashes, and sometimes lava issue is about 200 yards northwest of station. The position of the tablet was computed.

Signal: A cairn 6 feet at base and 5 feet high.

Station mark: A triangulation tablet set in solid rock under center of cairn.

[Latitude 40° 29′ 18.939″. Longitude 121° 30′ 15.296″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Colby	2 36 25.79	182 35 38.89	4.5765499	23.437
Turner	24 21 24.63	204 17 03.66	4.3628774	14.329
Lyons	28 56 25.67	208 51 10.91	4.3748371	14.729
Brokeoff	44 24 21.32	224 22 13.87	3.8204344	4.110
Inskip	66 30 17.79	246 13 15.08	4.6085032	25.226
Bally	97 50 56.09	277 06 14.50	4.9907799	60.832
Snow	139 38 01.75	319 26 55.34	4.5691893	23.043
Crater	157 32 07.98	337 27 40.91	4.4017203	15.670
Burney	163 37 17.48	343 32 28.70	4.5664436	22.898
Bald Mountain	193 06 48.02	13 11 45.34	4.6724888	29.231
West Prospect	222 08 17.02	42 13 10.68	4.1995763	9.838
Harvey	234 38 20.66	54 56 41.21	4.6869818	30.223
Prospect	234 58 15.90	55 04 28.17	4.2162828	10.224
Red Cinder	267 39 55.94	87 49 59.07	4.3402539	13.602
Pegleg	280 41 55.97	101 03 26.53	4.6788424	29.661
Dyer	304 26 03.94	124 44 25.11	4.6877907	30.279
Butt	341 22 55.13	161 27 32.21	4.5009723	19.693

LYONS, TEHAMA COUNTY, CALIF.

A station of the U. S. Coast and Geodetic Survey about 5 miles east of Lyonsville post office, on a ridge known locally as Bald Hill, about 300 yards from the summit of the ridge, on the shoulder extending toward Lyonsville, and in the middle of a large group of boulders. A lone fir tree stands about 50 meters south by east from the station. The best route to the station is from Mineral post office.

Station mark: A $\frac{3}{8}$-inch copper bolt 3 inches long, cemented into a drill hole in the rock, and directly above the bolt in the same drill hole is cemented an old-type station mark. A cross in the top of the copper bolt and another in the polished center of the disk mark the station.

Reference marks: A drill or punch hole in the top of a $\frac{3}{8}$-inch copper bolt 3 inches long, which is leaded or cemented into a drill hole in large rock with the top of the bolt flush with the surface; marks are at the following distances and azimuths from the station: 29.69 meters, 126° 59′; and 20.22 meters, 332° 22′.

[Latitude 40° 18′ 06.100″. Longitude 121° 38′ 21.008″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
De Witt	58 37 45.72	238 25 51.97	4.4861773	19.034
Inskip	99 56 56.83	279 45 10.37	4.4176646	16.256
Bally	111 39 38.03	291 00 16.70	4.9640937	57.206
Cone	119 30 41.94	299 16 42.51	4.5450833	21.799
Round	154 22 27.03	334 10 02.03	4.7931190	38.590
Snow	165 32 56.28	345 27 06.72	4.7039865	31.429
Crater	182 17 49.91	2 18 38.79	4.6443176	27.395
Lassen	208 51 10.91	28 56 25.67	4.3748371	14.729
Red Cinder	236 55 59.39	57 11 16.16	4.5993128	24.698
Butt	293 11 46.79	113 21 37.23	4.3711283	14.604
Marysville Butte (C. & G. S.)	7 18 50.85	187 11 54.82	5.0885296	.....
Snow Mountain east (C. & G. S.)	43 24 27.26	222 41 41.92	5.1444074	.....
Kent (C. & G. S.)	68 42 27.63	247 59 59.25	5.0030155	.....

M'ARTHUR, SHASTA COUNTY, CALIF. (No check. Not occupied.)

Station mark: Cupola on school building on south side of town of McArthur.

[Latitude 41° 02′ 46.651″. Longitude 121° 23′ 53.448″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Saddle	70 26 16.09	250 22 26.00	3.9390518	5.400
Bald Mountain	353 51 27.65	173 52 16.26	4.2099421	10.076

PEGLEG, LASSEN COUNTY, CALIF.

Station is on the highest point of Pegleg Mountain, a well-known peak about 2.5 miles south of Westwood Junction on the Southern Pacific R. R., 11 miles north of Westwood. The U. S. Forest Service has a lookout station on the highest point of mountain, and the cabin, 10 feet square and about 15 feet high, was used for a signal.

Reference mark: A bronze triangulation tablet set in solid rock, 4.02 meters a little east of south of cabin, and instrument placed over tablet. True azimuth cabin to tablet 342° 52′.

Position of cabin computed.

[Latitude 40° 24′ 26.872″. Longitude 120° 57′ 06.027″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Keddie	3 45 03.64	183 44 25.62	4.3272192	13.200
Dyer	20 07 05.83	200 03 58.81	4.2980235	12.342
Butt	60 26 07.53	240 09 17.40	4.6278285	26.374
Turner	78 12 28.55	257 46 39.74	4.7612451	35.859
Lassen	101 03 26.53	280 41 55.97	4.6788424	29.661
Red Cinder	111 38 43.97	291 27 15.94	4.4292118	16.694
Harvey	169 17 27.11	349 14 12.85	4.5764747	23.433
Antelope	189 49 20.42	9 50 58.80	4.3197279	12.974
Coyote	321 50 22.30	141 55 02.34	4.2184094	10.274
Kettle	325 36 32.14	145 45 32.28	4.5442227	21.756

PITTVILLE, SHASTA COUNTY, CALIF. (Not occupied. No check.)

Station mark: Steeple on church at Pittville post office.

[Latitude 41° 02′ 59.220″. Longitude 121° 20′ 08.309″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bald Mountain	12 05 02.39	192 03 23.36	4.2274765	10.491
Saddle	76 15 16.71	256 08 58.80	4.1413164	8.603

PROSPECT, SHASTA COUNTY, CALIF. (Not occupied.)

Station mark: A prominent tree, probably trimmed, on summit of Prospect Peak, a well-known point northeast of Lassen.

[Latitude 40° 34′ 24.741″. Longitude 121° 20′ 42.462″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Butt	4 57 40.42	184 56 06.51	4.5979369	24.620
Lassen	55 04 28.17	234 58 15.90	4.2162828	10.224
Crater	121 03 23.72	300 52 43.35	4.4305236	16.745
Burney	137 27 24.31	317 16 21.80	4.5468666	21.889
Bald Mountain	175 41 59.44	355 40 43.18	4.5620381	22.667
Harvey	234 34 21.96	54 46 30.22	4.5076492	19.999
Red Cinder	315 37 33.99	135 41 25.35	4.0787072	7.448

RED CINDER, LASSEN COUNTY, CALIF.

Station is on highest point of Red Cinder Butte, a well-known bald mountain, about 7 miles west-southwest of Stevens' summer cattle range on Pine Creek, and about 5 miles west of Silver Lake. The closest point of importance is Westwood, which is about 35 miles southeast. There is a fair road from Clover Valley and one from Bogards to the Stevens place. Wagons can not be taken beyond the Stevens place

very well, though there is a very rough road from there to Silver Lake and another rough road from Clover Valley to Silver Lake. Animals are easily ridden to the point from almost any direction.

Signal: A cairn 7 feet high with 12-foot fir tree in center.

Station mark: A triangulation tablet set in solid rock under center of cairn.

[Latitude 40° 29′ 46.810″. Longitude 121° 14′ 46.478″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Butt	20 58 36.28	200 53 11.92	4.5196298	20.558
Turner	55 15 31.71	235 01 08.76	4.5828454	23.779
Lyons	57 11 16.16	236 55 59.39	4.5993128	24.698
Brokeoff	78 12 04.99	257 59 54.67	4 4327868	16.832
Lassen	87 49 59.07	267 39 55.94	4.3402539	13.602
Crater	125 35 36.45	305 21 04.94	4.5873406	24.027
Prospect	135 31 25.35	315 37 33.99	4.0787072	7.448
Burney	137 03 22.62	316 48 28.73	4.6740212	29.334
Bald Mountain	166 10 10.87	346 05 02.54	4.6655698	28.769
Harvey	213 18 18.28	33 26 34.22	4.5125597	20.226
Antelope	249 19 01.21	69 32 09.01	4.4837507	18.928
Pegleg	291 27 15.94	111 38 43.97	4.4292118	16.694
Coyote	302 52 38.30	123 08 45.80	4.6231468	26.091
Kettle	310 44 18.39	131 04 45.22	4.7725326	36.803
Keddie	322 38 38.02	142 49 26.65	4.5914659	24.256
Dyer	327 23 13.26	147 31 32.92	4.5293560	21.021

ROUND, SHASTA COUNTY, CALIF.

A station of the U. S. Coast and Geodetic Survey, on the highest part of what is known as Round Mountain, just north of the post office of the same name.

Station mark: A ⅝-inch copper bolt 3 inches long cemented into a drill hole in a large boulder which projects about 6 inches out of the ground, and directly above the bolt in the same drill hole is cemented an old-type station mark. A cross in the top of the copper bolt and another in the polished center of the disk mark the station.

Reference marks: A drill or punch hole in the top of a ⅝-inch copper bolt, 3 inches long, which is leaded or cemented into a drill hole in a rock with the top of the bolt flush with the surface. Two such marks are at the following distances and azimuths from the station; 28.72 meters, 345° 30′; and 6.43 meters 57° 13′. The south reference mark is in the most eastern rock of a prominent group of rocks near the south end of the summit.

[Latitude 40° 48′ 19.882″. Longitude 121° 57′ 26.873″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cone	5 12 34.94	185 10 57.36	4.5898083	24.163
Bally	69 14 22.18	248 47 16.01	4.7972333	38.957
Burney	269 34 27.81	89 47 24.34	4.4448735	17.307
Snow	296 01 23.38	116 08 00.37	4.2006062	9.862
Turner	332 40 01.23	152 53 20.18	4.8007758	39.276
Lyons	334 10 02.03	154 22 27.03	4.7931190	38.590
Inskip	358 34 43.87	178 35 19.06	4.7116944	31.992
Kent (C. & G. S.)	35 40 46.89	215 10 27.70	5.0578276	.....

SADDLE, SHASTA COUNTY, CALIF.

Station is on highest point of a bald mountain, locally known as Saddle Mountain, about 4 miles northwest of Fall River Mills. There is a good road from Fall River Mills to foot of mountain, thence north up ridge about a mile to summit. Animals can be ridden to summit.

Signal: A lone juniper tree 7 feet high on highest point.

Station mark: A bronze triangulation tablet set in rock 1.90 meters east of tree. Position of tablet computed.

[Latitude 41° 01′ 12.173″. Longitude 121° 29′ 43.938″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Crater	16 11 47.41	196 06 58.37	4.5703853	23.107
Burney	25 11 06.23	205 05 55.34	4.4174010	16.246
Snow	38 49 35.96	218 38 05.41	4.5964030	24.533
McArthur	250 22 26.00	70 26 16.09	3.9390518	5.400
Pittville	256 08 58.80	76 15 16.71	4.1413164	8.603
Snell	281 14 02.60	101 21 01.03	4.1817569	9.443
Fall River	287 01 14.98	107 03 33.63	3.7129613	3.209
Dixie	288 24 32.07	108 40 23.36	4.5536808	22.235
Harvey	308 24 50.49	128 42 56.44	4.6962252	30.873
Bald Mountain	323 01 35.05	143 06 13.40	4.2181368	10.268

SNELL, LASSEN COUNTY, CALIF. (Not occupied. No check.)

Station mark: Center of high water tank at Mr. Snell's ranch about 10 miles east of Fall River Mills.

[Latitude 40° 59′ 35.708″. Longitude 121° 19′ 06.227″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bald Mountain	25 59 21.91	205 57 02.26	4.0562255	7.073
Saddle	101 21 01.03	281 14 02.60	4.1817569	9.443

SNOW, SHASTA COUNTY, CALIF.

Station is on the more southern of two very prominent mountains about 7 or 8 miles west of Tamarack Flat, a well-known place about 14 miles south of Burney post office. The peak is locally known as Snow Mountain. The north point is a little higher than the point used but is covered with timber.

Animals can be ridden from Tamarack Flat, the summer home of Mr. Dan Covey, to summit of peak, but there is no well-defined trail.

Signal: A cairn 6 feet at base and 6 feet high with tree in center.

Station mark: A bronze triangulation tablet set in solid rock at center of cairn.

[Latitude 40° 44′ 33.701″. Longitude 121° 47′ 19.000″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Inskip	16 22 28.27	196 16 28.31	4.6661722	28.809
Cone	29 21 58.77	209 13 45.66	4.5611916	22.623
Bally	78 17 06.06	257 43 24.74	4.8719614	46.271
Round	116 08 00.37	296 01 23.38	4.2006062	9.862
Saddle	218 38 05.41	38 49 35.96	4.5964030	24.533
Burney	242 17 41.34	62 24 00.38	4.1865539	9.548
Crater	288 48 30.52	108 55 10.59	4.1821344	9.451
Lassen	319 26 55.34	139 38 01.75	4.5691893	23.043
Turner	343 24 21.68	163 31 05.16	4.7105858	31.911
Lyons	345 27 06.72	165 32 56.28	4.7039865	31.429

TURNER, TEHAMA COUNTY, CALIF.

Station is on the highest point of Turner Mountain, a prominent ridge about 5 miles south of Mineral post office. The U. S. Forest Service has a 9 by 9 foot cabin for lookout on the mountain, and there is a good trail from Mineral to the station.

Station mark: Center of U. S. Forest Service cabin.

Reference mark: A bronze triangulation tablet set in solid rock 1.7 feet east of northeast corner of cabin. Distance from station to reference mark, 2.60 meters; true azimuth from station to reference mark 232° 55′. Position of center of cabin computed.

[Latitude 40° 17′ 57.638″. Longitude 121° 36′ 58.000″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bally	111 22 55.57	290 42 40.44	4.9730552	58.399
Round	152 53 20.18	332 40 01.23	4.8007758	39.276
Snow	163 31 05.16	343 24 21.68	4.7105858	31.911
Crater	179 45 54.30	359 45 49.27	4.6465358	27.535
Brokeoff	196 37 12.01	16 39 25.66	4.2304507	10.563
Lassen	204 17 03.66	24 21 24.63	4.3628774	14.329
Red Cinder	235 01 08.76	55 15 31.71	4.5828454	23.779
Pegleg	257 46 39.74	78 12 28.55	4.7612451	35.859
Dyer	277 25 52.63	97 48 31.95	4.7001031	31.150
Butt	294 37 24.56	114 46 21.34	4.3345578	13.425
Colby	334 52 02.53	154 55 35.78	4.2648901	11.435

WEST PROSPECT, SHASTA COUNTY, CALIF. (Not occupied.)

Highest point of West Prospect Peak, about 3 miles northwest of Prospect Peak.

[Latitude 40° 35′ 39.336″. Longitude 121° 22′ 43.528″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lassen	42 13 10.68	222 08 17.02	4.1995763	9.838
Crater	119 47 57.35	299 38 35.70	4.3678633	14.495
Burney	138 24 57.70	318 15 13.99	4.4098303	19.642
Bald Mountain	180 09 56.36	0 09 59.10	4.5324311	21.173
Harvey	240 37 04.07	60 50 31.38	4.5231887	20.727

Adelaida, Bonanza, Bradley, Bryson, Cayucos, Gonzales, Hollister, Jamesburg, Junipero Serra, King City, Paso Robles, Point Sur, San Benito, San Miguel, and San Simeon 15′ quadrangles.

Academy, Berendo, Biola Bliss Ranch, Bonita Ranch, Chaney Ranch, Chowchilla, Clovis, Dos Palos, Daulton, Elgin, Firebaugh, Fresno, Friant, Gregg, Gustine, Herndon, Indian Gulch, Ingomar, Jamesan, Jesbel, Kearney Park, Kentucky Well, Kerman, Kismet, Lanes Bridge, Le Grand, Lingard, Little Panoche, Little Table Mountain, Los Banos, Madera, Malaga, Mendota, Merced, No. 19, No. 21, No. 25, Orangedale, Oxalis, Plainsberg, Planada, Pozo Farm, Reedley, Round Mountain, Salt Slough, Sandy Mush, Sanger, San Joaquin, Santa Rita Ranch, Selma, Sheep Ranch, Squaw Valley, Sultana, Tranquillity, Trimmer, Tufts Ranch, Turner Ranch, and Wahtoke 7½′ quadrangles.

FRESNO, MADERA, MERCED, MONTEREY, SAN BENITO, AND SAN LUIS OBISPO COUNTIES.

During the seasons of 1915, 1916, and 1917, C. F. Urquhart and L. F. Biggs extended triangulation over the above-named quadrangles.

Positions are on North American datum, derived from stations of the U. S. Geological Survey and the U. S. Coast and Geodetic Survey previously located in this area.

ADOBE, MADERA COUNTY, CALIF., FROM SOUTH.

On a small bald hill owned by the Krohn estate, situated on the south side of the Adobe ranch. The hill is about 1 mile north of Mr. Wootten's ranch, which is 12 miles from Madera on the Madera and O'Neals road.

Signal: A cairn 5 feet high.

Station mark: A triangulation tablet set in rock under center of cairn.

[Latitude 37° 02′ 03.094″(from south), 37° 02′ 03.146″ (from north). Longitude 119° 51′ 41.132″ (from south), 119° 51′ 40.843″ (from north).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Greenleaf	21 23 22.93	201 20 41.41	4.2610799	11.335
Service	35 32 41.76	215 30 32.59	3.9606108	5.675
Madera (from north)	65 13 35.53	245 06 23.10	4.2917831	12.166
Madera	65 13 33.55	245 06 21.16	4.2917561	12.165
Copper	300 18 15.16	120 26 02.75	4.3479198	13.844
Hall	310 43 46.88	130 47 43.96	4.1093124	7.992
Fresno	348 45 23.68	168 48 02.27	4.5266352	20.892
Deepwell	356 24 16.08	176 24 35.75	4.1106596	8.017

ADOBE, MADERA COUNTY, CALIF., FROM NORTH.

On a small bald hill belonging to the Krohn estate, situated on the south side of the Adobe ranch. The hill is about 1 mile north of Mr. Wootten's ranch, which is 12 miles from Madera and on the Madera and O'Neals road.

Signal and station mark: Cairn 5 feet high and triangulation tablet set in rock under its center.

[Latitude 37° 02′ 03.146″ (from north), 37° 02′ 03.094″ (from south). Longitude 119° 51′ 40.843″ (from north) 119° 51′ 41.132″ (from south).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Madera (from south)	65 13 33.55	245 06 21.16	4.2917561	12.165
Madera	65 13 35.53	245 06 23.10	4.2917831	12.166
Talbot	90 15 09.30	270 09 07.42	4.1717116	9.227
Sharon	107 06 30.82	286 56 46.08	4.3990592	15.574
Daulton	135 13 48.96	315 09 25.36	4.1853123	9.521
Rabbit	151 35 52.69	231 33 22.24	4.1121673	8.045

ALFARATA, MERCED COUNTY, CALIF. (Not occupied.)

Station mark: Center of large silo at Alfarata, a siding on the Southern Pacific, R. R. about 3 miles southeast of Merced.

[Latitude 37° 16′ 37.494″. Longitude 120° 26′ 16.745″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lord	3 59 47.44	183 59 40.10	4.0057353	6.296
Eyrand	61 49 13.55	241 45 12.13	4.0650404	7.218
Merced	129 25 41.83	309 24 02.88	3.7165755	3.235
Hurricane	226 59 15.20	47 03 04.64	4.1051387	7.916
Monument	248 45 33.64	68 47 44.74	3.7573088	3.554

ALISO MILL, MADERA COUNTY, CALIF., FROM SOUTH.

A lone windmill on the Miller & Lux Aliso ranch about 12 miles east of Firebaugh. A wooden tank stands east of the mill, which is about 5 miles east of the Columbia ranch buildings.

Signal: The windmill pump rod.

Station mark: Center of well under mill.

[Latitude 36° 51′ 42.035″ (from south), 36° 51′ 42.074″ (from west). Longitude 120° 15′ 21.156″ (from south), 120° 15′ 21.189″ (from west).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Southeast Cottonwood (west)	182 04 39.08	2 04 46.63	3.9336920	5.334
Southeast Cottonwood	182 04 57.06	2 05 04.62	3.9335728	5.332
Miller & Lux Signal	223 33 53.69	43 36 59.63	4.0461435	6.910
Madera	237 46 21.25	57 53 22.54	4.3120667	12.747
Last Chance	269 48 35.19	89 52 13.64	3.9552171	5.605
Gallagher	295 10 59.87	115 16 03.59	4.1422972	8.623
Mill Tank	317 52 05.65	137 54 34.75	3.9633800	5.711

ALISO, MADERA COUNTY, CALIF.

On a sand dune, 50 feet south of Madera-Firebaugh road, 8 miles east of Firebaugh, 3 miles east of Miller & Lux ranch house, 0.1 mile east of jog in road at canal crossing.

Signal: Lumber.

Station mark: Iron post.

[Latitude 36° 52′ 26.01″. Longitude 120° 18′ 54.90″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Helm	33 12 47.70	213 10 34.66	4.0018767	6.241
Firebaugh	83 08 23.29	263 03 16.23	4.1061723	7.935
West Power	114 34 34.41	294 29 16.98	4.1579846	8.940
Syphon	159 24 45.87	339 22 42.22	4.1604948	8.992
Southeast Cottonwood	217 46 26.93	37 48 42.82	3.9610265	5.680
Aliso Mill	284 20 01.44	104 22 09.68	3.7375098	3.395

ALISO MILL, MADERA COUNTY, CALIF., FROM WEST.

A lone windmill on the Miller & Lux Aliso ranch, about 12 miles east of Firebaugh. A wooden tank stands east of the mill, which is about 5 miles east of the Columbia ranch buildings.

Signal: The windmill pump rod.

Station mark: Center of well under mill.

[Latitude 36° 51′ 42.074″ (from west), 36° 51′ 42.035″ (from south). Longitude 120° 15′ 21.189″ (from west), 120° 15′ 21.156″ (from south).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Helm	56 53 19.31	236 48 58.18	4.1103638	8.012
Columbia	80 05 51.98	260 02 06.82	3.9671745	5.761
Firebaugh	89 29 07.79	269 21 52.57	4.2546146	11.168
Aliso	104 22 09.66	284 20 01.44	3.7375098	3.395
Southeast Cottonwood	182 04 39.08	2 04 46.63	3.9336920	5.334
Southeast Cottonwood (south)	182 04 57.06	2 05 04.62	3.9335728	5.332

ARMSTRONG, SAN BENITO COUNTY, CALIF.

The highest and most eastern of three hills on the summit of ridge forming the divide between Salinas and San Benito rivers. It is probably in San Benito County but very near the Monterey County line. There is an old road (traveled very little) between Mulberry post office and Gonzales, which passes just under hill on the north and west sides. By this road station is 7 or 8 miles from Mulberry. It is a good horseback route but very poor for buggy or wagon. The land on which station is situated is owned by the Armstrong brothers, of Salinas.

Signal: An oak tree in center of cairn 4 or 5 feet high.

Station mark: A triangulation tablet set in rock 1.03 meters from signal, azimuth from tablet to signal being 184°.

[Latitude 36° 36′ 40.597″. Longitude 121° 18′ 50.350″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mount Toro (1908)	70 26 20.87	250 15 48.18	4.4477396	.....
Salinas (1908)	102 50 34.18	282 38 15.35	4.4987001	.....
Bardin (1908)	109 06 51.06	288 59 29.20	4.2891121	.....
Gavilan (1908)	131 08 43.66	311 01 20.99	4.3875319	.....
Hollister (1908)	163 23 38.15	343 20 25.50	4.4459584	.....
Santa Ana (1908)	192 30 48.53	12 33 43.64	4.5241889	.....
Bonanza (1908)	233 57 14.52	54 09 12.15	4.5659355	.....
Call (1908)	270 19 47.40	90 28 45.29	4.3505389	.....
San Benito (1908)	293 50 35.86	114 14 30.21	4.8177979	.....
Hepsedam (1908)	306 40 45.35	126 58 13.71	4.7393296	.....
Fremont (1917)	133 50 39.40	313 43 52.00	4.3702053	14.573
Paicines (1917)	182 28 40.26	2 28 56.92	4.2040293	9.940
Quien Sabe (1917)	199 31 34.03	19 34 59.63	4.4064630	15.842
Meco (1917)	235 32 41.24	55 41 53.53	4.4442413	17.282
Elkhorn (1917)	239 22 13.21	59 28 21.12	4.2499493	11.048
Harris (1917)	308 03 41.89	128 07 01.67	4.0248336	6.579
Chalone (1917)	329 28 57.24	149 33 12.32	4.3225499	13.059

ASH, MADERA COUNTY, CALIF., FROM WEST.

On the south bank of Ash Slough 7 miles southwest of Chowchilla. Follow the Robertson Boulevard for 2 miles to a signboard that reads "Alfalfa Colony," thence go westerly for 4 miles to Ash Slough, thence down south bank of slough to station.

Signal: A lumber quadripod with cross targets.

Station mark: Bench-mark post set under center of signal.

[Latitude 37° 04′ 40.892″ (from west), 37° 04′ 40.685″ (from north). Longitude 120° 22′ 44.000″ (from west), 120° 22′ 43.820″ (from north).

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Golden Hoof	38 28 15.43	218 23 50.80	4.2425475	10.862
Bridge	80 41 12.25	260 35 04.09	4.1844950	9.503
Johnson	82 48 09.25	262 43 16.03	4.0832402	7.526
Rodgers	113 37 15.08	293 32 03.76	4.1431363	8.639
El Nido	122 11 44.83	302 07 41.59	4.0704060	7.307
Bliss	153 11 10.60	333 10 12.31	3.7233285	3.286
Bliss (north)	153 10 57.57	333 09 59.28	3.7233285	3.286
Berenda Slough	324 42 16.33	144 44 10.12	3.9074271	5.021
Berenda Slough (north)	324 42 03.31	144 43 57.11	3.9074271	5.021
Syphon	356 22 42.59	176 22 56.63	3.9603124	5.671

ASH, MADERA COUNTY, CALIF., FROM NORTH.

On the south bank of Ash Slough 7 miles southwest of Chowchilla. Follow the Robertson Boulevard for 2 miles to a signboard that reads "Alfalfa Colony," thence go westerly for 4 miles to Ash Slough, thence down south bank of slough to station.

Signal: A lumber quadripod with cross targets.

Station mark: Bench-mark post set under center of signal.

[Latitude 37° 04′ 40.685″ (from north), 37° 04′ 40.892″ (from west). Longitude 120° 22′ 43.820″ (from north), 120° 22′ 44.000″ (from west).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bliss (west)	153 11 10.60	.....	3.7233285	3.286
Bliss	153 10 57.57	333 09 59.28	3.7233285	3.286
La Branza	205 04 07.55	25 06 12.32	4.0804456	7.478
Chowchilla	242 55 47.35	63 00 03.56	4.0709244	7.316
Fair Mead	270 09 33.15	90 16 18.75	4.2205790	10.326
Berenda Slough	324 42 03.31	144 43 57.11	3.9074271	5.021
Berenda Slough (west)	324 42 16.33	144 44 10.12	3.9074271	5.021

BAREILLAS, MERCED COUNTY, CALIF.

On a bald peak, the lowest and most eastern of three peaks on land owned by J. C. Bareillas. About 3 miles a little east of south from the San Luis ranch, which is on the road between Los Banos and Hollister, about 15 miles from the former. The signal can be seen from this ranch.

Signal and station mark: A cairn 7 feet high.

Reference mark: A tablet set in rock, 1.72 meters south of the signal.

[Latitude 37° 01′ 33.559″ (1908–15), 37° 01′ 33.570″ (1912–13). Longitude 121° 02′ 19.450″ (1908–15), 121° 02′ 19.456″ (1912–13).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Santa Ana (1908)	52 17 17.12	232 10 17.21	4.3394971	
Pacheco (1908)	84 56 48.03	264 47 49.87	4.3460746	
Volts (1908)	231 57 39.22	52 01 38.54	4.0952256	
Los Banos (1908)	257 28 07.49	77 34 57.41	4.2360987	
Oil Stack (1908)	277 19 30.87	97 31 32.73	4.4756665	
South Dos Palos (1908)	281 14 30.42	101 28 22.03	4.5422771	
Miller No. 2 (1908)	300 07 41.49	120 21 51.29	4.6076025	
White (1908)	305 16 29.54	125 23 37.82	4.3343198	
Bonanza (1908)	347 58 53.17	168 00 59.10	4.3972398	
Santa Ana (1912–13)	52 17 14.01	232 10 14.11	4.3394995	13.578
Pacheco (1912–13)	84 55 47.40	264 46 49.16	4.3461620	13.788
Howard (1912–13)	133 51 38.01	313 45 06.23	4.3468888	13.811
Christian (1912–13)	165 13 30.43	345 11 30.55	4.2836434	11.940
Gustine (1915)	187 28 57.84	7 30 19.34	4.4073108	15.873
Romero (1915)	190 15 02.77	10 15 53.96	4.0710566	7.318
Ingomar (1915)	200 11 57.82	20 14 31.54	4.2601790	11.312
Fairmont (1915)	212 24 02.62	32 29 59.59	4.4346644	16.905
Underwood (1915)	223 51 58.51	43 59 12.88	4.4086518	15.922
Milepost 162 (1915)	233 32 13.65	53 38 41.10	4.2949810	12.255
Los Banos Tank (1915)	257 15 17.99	77 22 17.66	4.2466538	10.965
Pipeline (1915)	268 29 50.13	88 33 11.41	3.9172138	5.135

BEAR HILL, FRESNO COUNTY, CALIF.

On the west end of Bear Hill about 18 miles east of Sanger.

Signal: A 20-foot trimmed live-oak tree.

Reference mark: A tablet set in rock, azimuth from tablet to signal, 61° 30′; distance, 19 feet.

Position of signal tree computed.

[Latitude 36° 44′ 45.570″. Longitude 119° 16′ 57.336″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Smith	17 09 44.36	197 07 29.62	4.2790135	11.813
Campbell	65 48 48.26	245 43 50.25	4.1323649	8.428
Tivey	88 19 03.89	268 15 01.33	4.0027310	6.253
Red Mountain	141 24 49.96	321 20 38.75	4.2215142	10.348
Sampson	260 48 49.85	80 55 19.29	4.2134869	10.159
Stokes	343 14 54.32	163 17 56.84	4.4217145	16.408
Orosi	354 38 55.52	174 39 44.62	4.3411858	13.631

BELMONT, MERCED COUNTY, CALIF.

The center of west one of two large concrete silos at the Miller & Lux Belmont ranch, about 4 miles north of the town of Dos Palos.

Signal and station mark: Center of silo.

[Latitude 37° 02′ 14.498″. Longitude 120° 37′ 23.560″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Dos Palos	1 54 00.79	181 53 56.30	3.7452289	3.456
White	54 42 58.16	234 35 06.76	4.3759685	14.768
Power	103 13 15.90	283 09 48.67	3.9410284	5.425
San Juan	148 19 47.67	328 18 35.13	3.7529990	3.518
Lucerne	205 20 22.17	25 21 26.25	3.7878512	3.812
Bridge	253 02 13.05	73 04 54.97	3.8415535	4.314
Golden Hoof	310 07 04.05	130 11 28.83	4.1533735	8.845

BERENDA SCHOOL, MADERA COUNTY, CALIF. (Not occupied.)

Cupola on schoolhouse at Berenda, a small town on the Southern Pacific R. R., between Merced and Madera.

[Latitude 37° 02′ 16.200″. Longitude 120° 09′ 09.998″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Crumley	28 56 32.28	208 56 01.75	3.4133365	1.609
Sharon	195 42 53.00	15 43 40.65	3.8577427	4.478
Talbot	271 46 17.76	91 50 47.80	4.0447607	6.888
Madera	316 30 38.35	136 33 57.29	4.0749278	7.384

BERENDA SLOUGH, MADERA COUNTY, CALIF., FROM WEST.

On the northwest end of bridge over Berenda Slough 9 miles southwest of Chowchilla. Follow Robertson Boulevard to Fillmore Avenue, thence go east to Elm Avenue, thence south to station.

Signal: Lumber structure with cross targets and flag.

Reference mark: Second wall post 8 feet from northwest corner of bridge.

[Latitude 37° 01′ 06.912″ (from west), 37° 01′ 06.714″ (from north). Longitude 120° 19′ 35.134″ (from west), 120° 19′ 34.939″ (from north.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Syphon	58 28 24.56	238 26 44.91	3.6814664	2.984
Ash	144 44 10.12	324 42 16.33	3.9074271	5.021
Ash (north)	144 43 57.11	324 42 03.31	3.9074271	5.021
Southeast Cottonwood	323 14 44.48	143 17 24.80	4.0422536	6.849
Southeast Cottonwood (north)	323 14 31.48	143 17 30.32	4.0422536	6.849

BERENDA SLOUGH, MADERA COUNTY, CALIF., FROM NORTH.

On the northwest end of bridge over Berenda Slough 9 miles southwest of Chowchilla. Follow Robertson Boulevard to Fillmore Avenue, thence go east to Elm Avenue, thence south to station.

Signal: Lumber structure with cross targets and flag.

Reference mark: Second wall post 8 feet from northwest corner of bridge.

[Latitude 37° 01′ 06.714″ (from north), 37° 01′ 06.912″ (from west). Longitude 120° 19′ 34.939″ (from north), 120° 19′ 35.134″ (from west.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ash (west)	144 44 10.12	324 42 16.33	3.9074271	5.021
Ash	144 43 57.11	324 42 03.31	3.9074271	5.021
Chowchilla	205 58 27.83	26 00 49.99	4.1235994	8.259
Fairmead	241 18 24.28	61 23 15.80	4.1343554	8.467
Fuller	284 10 05.20	104 13 09.51	3.8925604	4.852
Southeast Cottonwood	323 14 31.48	143 17 30.32	4.0422536	6.849
Southeast Cottonwood (west)	323 14 44.48	143 17 24.80	4.0422536	6.849

BIOLA, FRESNO COUNTY, CALIF.

Station and signal: Large water tank at Biola station, which is on a branch railroad, 7 miles northeast of Kerman.

Signal and station mark: Center of tank.

[Latitude 36° 48′ 02.139″. Longitude 120° 00′ 53.596″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Kerman	25 24 43.26	205 23 05.25	3.9763586	5.884
Gallagher	95 32 50.98	275 29 14.74	3.9537156	5.586
Madera	166 56 02.01	346 54 22.35	4.2594110	11.292
Eastin	183 57 22.10	3 57 34.34	3.8643524	4.547
Green Leaf	218 10 49.56	38 13 39.73	4.0557672	7.065
Deep Well	227 57 47.61	48 03 30.59	4.2900607	12.117
Fresno	289 08 39.24	109 16 39.85	4.3313870	13.327
Kearney	315 08 42.51	135 12 10.77	4.0878869	7.607

BISHOFF, MONTEREY COUNTY, CALIF.

On sharp peak 3 or 4 miles west-southwest of King City. It is the highest point in the foothills overlooking valley from west. Station can be reached from King City by going west and crossing the long bridge over Salinas River, thence through gate to Mr. Allan Dillon's residence, thence up canyon passing Fred Hansen's residence and on to head of canyon which is at foot of peak. From this point on foot or horseback to summit.

Signal: A greasewood bush about 11 feet high.

Station mark: A triangulation tablet set in top of rock at foot of signal.

[Latitude 36° 11′ 25.380″ (1909), 36° 11′ 25.170″ (1917). Longitude 121° 12′ 00.610″ (1909), 121° 12′ 00.538″ (1917).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Wiley (1909)	141 44 49.87	321 42 12.45	4.0309625	.....
Hanley (1909)	176 05 44.53	356 05 10.34	4.3242187	.....
Pinalito (1909)	218 15 59.06	38 20 19.54	4.2490167	.....
King City (1909)	245 21 57.81	65 24 35.54	3.8655621	.....
Eade (1909)	259 17 50.12	79 26 01.25	4.3249351	.....
Eade (1917)	259 17 57.41	79 26 08.61	4.3250001	13.133
Pine Creek (1917)	14 28 01.55	194 27 02.84	3.9985104	6.192
Santa Lucia (1917)	75 58 30.31	255 50 46.80	4.3061705	12.575
Chew (1917)	112 13 02.44	292 00 00.14	4.5520767	22.153
Williams (1917)	325 47 57.01	145 54 59.25	4.5047955	19.868

BLACKSMITH, MERCED COUNTY, CALIF.

About 12 miles by road northeast of Merced, 2 miles northeast of Merced reservoir, 1 mile south of Lower Merced Falls road, on summit of hill in pasture.

Signal: Lumber structure with cross targets.

Station mark: Iron bench-mark post centered under signal.

Latitude 37 °24′ 26.708″. Longitude 120° 23′ 05.779″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Merced (N)	38 01 52.87	217 58 17.90	4.1511041	8.800
Lakeside School (N)	38 26 17.53	218 24 34.38	3.8277024	4.179
Nairn (N)	69 48 02.42	249 43 11.34	4.0992809	7.810
Lighthouse (N)	96 18 00.51	276 12 48.26	4.1042753	7.900
Amsterdam (N)	98 35 36.48	278 29 30.80	4.1750801	9.299
Wassom (N)	118 09 29.67	298 06 03.03	3.9767853	5.890
Super (N)	122 37 10.43	302 35 38.27	3.6461410	2.751
Hurricane (N)	321 23 46.90	141 25 40.76	3.8699886	4.597
South Point (N)	337 23 40.96	157 25 55.17	4.1515650	8.809
Monument (N)	357 06 20.74	177 06 36.17	4.0937836	7.711
Merced (U)	38 01 52.87	217 58 17.90	4.1511041	8.799
West Butte (U)	263 40 02.21	83 45 34.87	4.1317959	8.417
Flat Top (U)	301 39 45.25	121 49 44.89	4.4566259	17.782
LeGrand (U)	320 23 49.51	140 29 02.11	4.2993034	12.378
Hurricane (U)	321 23 18.44	141 25 12.29	3.8689719	4.595
Monument (U)	357 06 17.29	177 06 32.73	4.0937954	7.712

N=Work done by C. L. Nelson in 1914; U= work done by C. F. Urquhart in 1914.

BLISS, MERCED COUNTY, CALIF., FROM WEST.

In Mr. Bliss's pasture field, 0.75 mile northeast of the ranch house. To reach it go westerly from Minturn, a station on the Southern Pacific R. R., past the Sieca Vista ranch. The signal is about 7 miles from Minturn.

Signal: Quadripod with cross targets.

Station mark: Iron bench-mark post centered under signal.

[Latitude 37° 07′ 13.776″ (from north), 37° 07′ 13.989″ (from west). Longitude 120° 24′ 20.465 (from north), 120° 24′ 20.632″ (from west).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Johnson	57 03 25.13	236 59 30.05	4.0597503	7.130
Rodgers	94 41 02.16	274 36 49.01	4.0165461	6.455
Honn	117 56 01.82	.....	3.6941369	3.072
Honn (north)	117 55 48.79	297 54 01.94	3.6941369	3.072

BLISS, MERCED COUNTY, CALIF., FROM NORTH.

In Mr. Bliss's pasture field, 0.75 mile northeast of the ranch house. To reach it go westerly from Minturn, a station on the Southern Pacific R. R., past the Sieca Vista ranch. The signal is about 7 miles from Minturn.

Signal: Quadripod with cross targets.

Station mark: Iron bench-mark post centered under signal.

[Latitude 37° 07′ 13.776″ (from north), 37° 07′ 13.989″ (from west). Longitude 120° 24′ 20.465″ (from north) 120° 24′ 20.632″ (from west).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Honn	117 55 48.79	297 54 01.94	3.6941369	3.072
Lord	153 49 00.49	333 47 32.95	3.9085808	5.034
La Branza	230 25 56.00	50 28 59.19	3.9871177	6.032
Chowchilla	267 08 37.56	87 13 52.22	4.1101135	8.007
Ash	333 09 59.28	153 10 57.57	3.7233285	3.286
Ash (west)	333 10 12.31	153 11 10.60	3.7233285	3.286

BONANZA, MERCED COUNTY, CALIF.

On a high, bald peak, which has oak trees growing just below the summit on the north side. It is about 3 miles northeast of Bonanza post office. From Tres Pinos on the Southern Pacific R. R. there is a road to Bonanza post office, distance 24 miles, thence the way is up canyon 1 mile to Mr. Sepulveda's ranch. From this place there is a trail or wood road about a mile farther up canyon and trail from there to summit. Animals can be ridden all the way up. Station can also be reached from the San Joaquin side by going up a wood road to summit, thence south along ridge to highest point.

Signal: A cairn 8 feet high.

Station mark: A tablet in rock placed under center of signal.

[Latitude 36° 48′ 21.558″. Longitude 120° 58′ 49.786″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Call (1908)	18 49 51.53	198 46 53.03	4.3615909	14.287
Armstrong (1908)	54 09 12.15	233 57 14.52	4.5659355	22.871
Santa Ana (1908)	116 11 52.03	296 02 47.44	4.3988290	15.566
Bareillas (1908)	168 00 59.10	347 58 53.17	4.3972398	15.509
White (1908)	226 11 02.36	46 16 03.78	4.2364938	10.711
Miller No. 1 (1908)	218 32 29.67	68 40 49.17	4.3456994	13.774
Miller No. 2 (1908)	262 15 19.98	82 27 21.95	4.4788602	18.716
Miller Head (1908)	269 01 03.61	89 16 18.47	4.5781093	23.521
Miller No. 3 (1908)	278 06 28.35	98 21 35.12	4.5791323	23.577
San Benito (1908)	328 00 19.79	148 12 21.82	4.7558232	35.414
Indian (1908)	308 48 18.34	128 57 25.73	4.4651214	18.133
Meco (1917)	49 15 11.38	229 12 26.10	3.9561009	5.616
Los Banos tank (1917)	203 02 01.39	23 06 54.01	4.4878415	19.107

BORLAND, FRESNO COUNTY, CALIF.

On the Miller & Lux Borland ranch about 7 miles south and a little east of Mendota.

Signal and station mark: Center of No. 5 smokestack.

[Latitude 36° 40′ 43.086″. Longitude 120° 19′ 41.698″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cantua	12 48 38.32	192 46 57.81	4.2769295	11.757
Telephone	95 07 34.13	275 00 53.67	4.2229194	10.382
Helm	161 52 40.46	341 50 55.70	4.1447886	8.672
Hermanhouse	188 30 04.18	8 30 31.01	3.8768482	4.679
Jamesan	240 44 25.56	60 48 51.34	4.1019662	7.858
Kings	266 18 52.71	86 22 30.47	3.9575854	5.636
Derrick	293 36 32.91	113 43 21.33	4.2685567	11.532
Tanks	344 36 06.12	164 36 40.68	3.7336756	3.365

BOULDER, MONTEREY COUNTY, CALIF. (Not occupied.)

This is probably the old U. S. Coast and Geodetic Survey station Mount Boulder.

[Latitude 36° 23′ 10.206″. Longitude 121° 47′ 15.408″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chalk	189 19 22.31	9 20 32.99	4.2614170	11.344
Mount Toro	225 47 20.74	45 53 42.90	4.3487418	13.871
Chew	292 45 56.55	112 53 45.91	4.3309168	13.313
Santa Lucia	308 39 54.41	128 53 00.84	4.6290707	26.450

BRIDGE, MERCED COUNTY, CALIF. (Not occupied.)

A target on bridge over San Joaquin River, on road from Dos Palos to Merced.

[Latitude 37° 03′ 20.171″. Longitude 120° 32′ 54.791″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Belmont	73 04 54.97	253 02 13.05	3.8415535	4.314
San Juan	106 14 51.03	286 11 31.84	4.0005040	6.221
Rodgers	196 11 43.79	16 12 40.91	3.9233892	5.209
Johnson	252 36 03.07	72 37 18.02	3.5078316	2.001
Ash	260 35 04.09	80 41 12.25	4.1844950	9.503
Golden Hoof	339 17 04.66	159 18 47.73	4.0783409	7.442

BULLARD FLAGPOLE, FRESNO COUNTY, CALIF. (Not occupied.)

Station is the flagpole on tank house at the Bullard Club, about 8 miles north of Fresno.

[Latitude 36° 50′ 55.335″. Longitude 119° 49′ 57.942″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Greenleaf	111 21 27.91	291 17 44.83	3.9950910	6.144
Deep Well	167 14 35.42	347 13 53.11	3.8977887	4.911
Fresno	342 07 59.68	162 09 36.12	4.1147057	8.092

CALL, SAN BENITO COUNTY, CALIF.

On a brushy peak on ridge south of Tres Pinos Creek and east of San Benito River. Can be reached by leaving the Hollister and Idria road on grade between twenty-fifth and twenty-sixth mileposts (from former place) and going south up ridge about 5 or 6 miles. Shortly after leaving main road the Bradford quicksilver mine is passed, and farther up the ridge there are two deserted houses. Station is at the end of open live-oak country on summit of ridge; signal can be seen about 0.25 mile south on a brushy peak. Mr. Call once lived near the summit, and the ridge is sometimes known by his name.

Signal: A cairn 7 feet high on highest point of peak.

Station mark: A triangulation tablet set in large rock 1 meter from signal; azimuth, 318°.

[Latitude 36° 36′ 35.463″. Longitude 121° 03′ 48.417″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Armstrong (1908)	90 28 45.29	270 19 47.40	4.3505389	13.928
Santa Ana (1908)	155 18 27.69	335 12 23.05	4.5576284	.....
Bonanza (1908)	198 46 53.03	18 49 51.53	4.3615909	14.287
Indian (1908)	263 22 48.63	83 34 52.92	4.4823341	.....
Buck (1908)	292 45 03.85	112 51 53.38	4.2680060	.....
San Benito (1908)	305 11 17.80	125 26 15.75	4.6633038	.....
Hepsedam (1908)	326 40 15.64	146 48 47.96	4.5926168	.....
Martin (1917)	13 21 19.43	193 20 01.54	4.1490672	8.758
Chalone (1917)	33 18 14.47	213 13 32.69	4.3318580	13.342
Lone Pine (1917)	43 45 33.95	223 41 49.00	4.1330026	8.440
Harris (1917)	65 42 21.44	245 36 43.70	4.1893173	9.609
Meco	182 01 20.75	2 01 34.25	4.2006530	9.863

CAMPBELL MOUNTAIN, FRESNO COUNTY, CALIF.

On the west end of Campbell Mountain about 8 miles east of Sanger.

Signal and station mark: Cairn 7 feet high with chiseled circle under center.

Reference mark: Bronze tablet 4 feet west of center of signal. Position of signal computed.

[Latitude 36° 41′ 45.003″. Longitude 119° 25′ 15.748″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Reedley	14 06 46.96	194 05 40.67	4.0539363	7.035
Kingsbury	30 06 26.65	210 01 47.80	4.3654139	14.413
Parlier	45 19 52.90	225 16 02.53	4.1298555	8.379
Sanger	96 49 12.00	276 44 21.13	4.0851381	7.559
Granville	107 03 13.71	286 57 25.32	4.1796546	9.397
Round	150 01 11.96	329 58 04.92	4.1987067	9.819
Mill	152 30 06.56	332 26 27.92	4.2922609	12.179
Red Mountain	186 01 09.75	6 01 57.10	4.2713925	11.608
Tivey	203 39 20.67	23 40 16.25	3.7595096	3.572
Bear Hill	245 43 50.25	65 48 48.26	4.1323649	8.428
Sampson	253 55 59.90	74 07 27.20	4.4721482	18.429
Orange Cove	309 15 59.79	129 19 56.83	4.1052375	7.917
Stokes	314 33 00.41	134 41 00.03	4.4484236	17.449
Orosi	318 23 44.52	138 29 30.91	4.3374712	13.515
Yettem	326 33 54.39	146 40 01.73	4.4446605	17.299
Smith	331 42 30.42	151 45 13.20	4.1555507	8.890
Dinuba	349 31 40.94	169 32 55.96	4.2357838	10.694

CANTUA, FRESNO COUNTY, CALIF.

On a slight raise about 4 miles southwest of the D. G. Longtin ranch house, where good water may be had. There is a cabin 0.25 mile northeast of signal.

Signal: A timber structure with one target 8 by 10 feet, facing northeast.

Station mark: Tablet in rock.

[Latitude 36° 30′ 44.517″. Longitude 120° 22′ 30.295″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Joaquin (1908)	19 21 35.75	199 18 37.72	4.3534305	14.021
San Benito (1908)	56 50 05.50	236 40 30.42	4.4598650	17.915
Indian (1908)	114 31 04.13	294 18 30.89	4.5379847	21.445
Shell No. 2 (1916)	124 04 05.82	303 58 57.54	4.1912724	9.652
Telephone (1908)	148 00 14.53	327 55 15.38	4.3712011	14.607
East Stack (1916)	164 49 39.00	344 48 34.08	4.0149715	6.432
Hermanhouse (1916)	191 33 22.06	11 35 29.43	4.4221967	16.427
Borland (1916)	192 46 57.81	12 48 38.32	4.2769295	11.757
Tanks (1916)	203 02 22.53	23 04 37.47	4.1576810	8.934
Jamesan (1916)	211 41 56.43	31 48 02.27	4.4617664	17.994
Derrick (1916)	242 30 52.34	62 39 20.40	4.3782577	14.846

CASTLE MOUNT, MONTEREY AND FRESNO COUNTIES, CALIF.

A station of the U. S. Coast and Geodetic Survey on a high hogback locally known as Black Mountain. It can be reached from Coalinga by rough road and trail past Parkfield, Turkey Flat, and Taylor's ranch, where accommodations can be had.

Station mark: A copper bolt in center of top of theodolite pier.

Reference marks: Copper nails (four) leaded in holes in rocks, approximately north, south, east, and west, as follows: North 4.525 feet; south 6.540 feet; east 3.520 feet; and west 10.390 feet. Concrete pier for meridian instrument was 1.6 meters due east of station, and wooden pier for vertical circle 10.642 meters southwest.

NOTE (by C. F. U. 1917).—The best way to reach the station is from Edward Taylor's ranch 6 miles east of Parkfield post office. Animals can be ridden to summit.

[Latitude 35° 56′ 21.338″. Longitude 120° 20′ 22.908″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hepsedam (1902)	133 51 16.62	313 34 08.71	4.7804191	.....
Center Peak (1902)	.....	.....	4.5887373	.....
Oak Flat (1902)	147 07 51.82	327 01 07.45	4.5001282	.....
Alcalde (1902)	164 49 51.29	344 47 38.90	4.3325900	.....
Oil City (1902)	178 11 52.42	358 11 24.69	4.5722254	.....
Black Tank (1902)	181 45 18.82	1 45 35.92	4.3727723	.....
Kinney (1902)	191 42 50.45	11 45 05.29	4.4500045	.....
Rocky Butte (1902)	65 10 20.33	244 45 05.68	4.8558353	44.585
Santa Lucia (1902)	103 35 26.85	282 57 22.08	4.9994343	62.056
Dresser (1917)	28 02 45.92	207 54 36.29	4.6519052	27.878
Estrella (1917)	35 34 11.34	215 27 50.43	4.4488243	17.465
Fair Oaks (1917)	51 31 30.06	231 15 34.56	4.7201779	32.623
Vineyard (1917)	60 34 17.50	240 22 33.77	4.5395326	21.522
Semas (1917)	82 40 09.16	262 23 07.28	4.6439980	27.375
Williams (1917)	91 31 58.16	271 08 40.76	4.7758227	37.083
Powell (1917)	101 43 14.13	281 29 56.41	4.5408143	21.586
Stockdale (1917)	103 55 06.76	283 46 36.87	4.3503908	13.923
Stone Canyon (1917)	116 23 51.90	296 16 20.56	4.3318977	13.343

CHALK, MONTEREY COUNTY, CALIF.

On a low ridge about 11 miles from Salinas. It can be reached from Salinas by taking the Monterey road to a point about 0.8 mile beyond summit, where there is a water trough and a signboard reading "To Del Monte ranch." Here take left hand road and continue on it to forks of three roads. Take the middle one and continue on it until just before Salinas Gun Club is reached. The signal can be seen from here, not more than half a mile distant.

Signal: A tree supported by three poles.

Station mark: A tablet set in rock. Azimuth from tablet to signal is 153°, distance, 15.67 meters.

[Latitude 36° 32′ 54.655″ (1917), 36° 32′ 54.674″ (1908). Longitude 121° 45′ 16.497″ (1917), 121° 45′ 16.506″ (1908).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Blanco (1908)	173 03 08.46	353 02 35.22	4.0587699	
Castroville (1908)	179 35 53.78	359 35 49.69	4.3847198	
Salinas (1908)	211 50 41.93	31 54 09.60	4.2145242	
Bardin (1908)	237 34 31.84	57 42 56.21	4.3958912	
Mount Toro (1908)	280 39 22.41	100 44 34.51	4.1228971	
Mount Toro (1917)	280 39 27.34	100 44 39.43	4.1228971	8.246
Ventana (1917)	346 42 44.72	166 45 29.80	4.4782974	18.692
Boulder (1917)	9 20 32.99	189 19 22.31	4.2614170	11.344

CHALONE, MONTEREY AND SAN BENITO COUNTIES, CALIF.

On the northwestern of the well-known Chalone Peaks, the highest peaks on east side of valley. There is a wagon road from Soledad to foot of peak, which is about 10 miles from Soledad. The peak is very near the line between Monterey and San Benito counties.

Signal: A cairn 7 feet high.

Station mark: A triangulation tablet in rock under center of cairn.

[Latitude 36° 26′ 53.023″ (1917), 36° 26′ 53.04″ (1909). Longitude 121° 11′ 41.821″ (1917), 121° 11′ 41.93″ (1909).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hanley (1909)	14 15 40.93	194 14 55.55	3.8884515	
Wiley (1909)	19 26 24.76	199 23 35.79	4.3299724	
Spadoni (1909)	74 09 52.49	254 02 13.78	4.3012792	
Soledad (1909)	78 29 53.67	258 25 07.13	4.0886495	
Mount Toro (1909)	103 17 48.75	283 03 02.53	4.5809152	
Henry (1909)	114 38 45.60	294 34 38.03	4.0571365	
Jacks (1909)	125 21 35.71	305 13 12.83	4.4110000	
Armstrong (1917)	149 33 12.32	329 28 57.24	4.3225499	13.059
Harris (1917)	168 40 01.22	348 39 05.71	4.0722502	7.338
Elkhorn (1917)	189 44 23.36	9 46 15.24	4.4402035	17.122
Lone Pine (1917)	196 19 38.67	16 20 35.64	3.9283823	5.269
Call (1917)	213 13 32.69	33 18 14.47	4.3318580	13.342
Martin (1917)	243 32 55.08	63 36 18.71	3.9788655	5.919

CHEW, MONTEREY COUNTY, CALIF.

The highest point of Chews Ridge, 7 miles by road south of Jamesburg. It can be reached by following the Tassajara Spring road from Jamesburg 7 miles to the summit, then continue $\frac{1}{8}$ mile beyond summit to a trail with signboard marked "Lookout Station $\frac{1}{4}$ mile." Follow this trail to station, which is a U. S. Forest Service lookout station.

Signal and station mark: A pole with cross targets.

Reference mark: A tablet set on the line Chew-Boulder 10 feet from center of signa Azimuth from tablet to signal, 112° 54′.

[Latitude 36° 18′ 40.501″. Longitude 121° 34′ 03.510″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ventana	73 24 08.77	253 20 14.38	4.0132896	6.407
Boulder	112 53 45.91	292 45 56.55	4.3309168	13.313
Mount Toro	171 11 03.72	351 09 35.40	4.3829144	15.006
Pole	213 11 10.08	33 13 52.96	4.0971643	7.772
Bishoff	292 00 00.14	112 13 02.44	4.5520767	22.153
Santa Lucia	323 45 29.24	143 50 46.95	4.3566443	14.125

CHOWCHILLA, MADERA COUNTY, CALIF.

Station is the center of large steel water tank at the town of Chowchilla on the Southern Pacific R. R. The tank supplies the town with water.

[Latitude 37° 07′ 34.27″. Longitude 120° 15′ 39.104″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Berenda Slough	26 00 49.995	205 58 27.83	4.1235994	8.259
Ash	63 00 03.56	242 55 47.35	4.0709244	7.316
Bliss	87 13 52.22	267 08 37.56	4.1101135	8.007
La Branza	135 54 03.62	315 51 51.96	3.8880722	4.802
Le Grand	186 05 47.42	6 06 28.96	4.2025688	9.906
Flat Top	219 32 30.19	39 38 57.84	4.3215165	13.028
Marguerite	243 05 19.97	63 08 28.61	3.9367548	5.372
Sharon	283 53 53.22	103 58 35.69	4.0758752	7.400
Fairmead	311 27 12.715	131 29 42.34	3.9124851	5.080
Crumley	325 16 17.00	145 19 40.99	4.1668480	9.124
Fuller	352 50 48.32	172 51 30.72	4.1452213	8.681

CHRISTIAN, MERCED COUNTY, CALIF.

On highest summit of bald, round hill, locally known as Christian Hill, on land owned by the Simon Newman Co., about 7 miles southwest of town of Gustine, a station on the Southern Pacific R. R., and 0.5 mile west of ranch owned by J. F. Schnyder. Can be reached from Schnyder's ranch on horseback.

Station mark: A 4 by 4 inch redwood pole, 14 feet high, having three cross targets, and sunk 3 feet in the ground.

Reference mark: A bronze triangulation tablet, set in rock 4.6 feet northwest of signal and station mark. True azimuth, station to reference mark, 163° 56′.

[Latitude 37° 11′ 36.236″ (1912), 37° 11′ 36.225″ (1915). Longitude 121° 05′ 38.142″ (1912), 121° 05′ 38.137″ (1915)].

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Howard (1912)	74 01 28.25	253 56 55.78	4.0633837	7.190
Orestimba (1912)	141 16 09.99	321 11 24.08	4.2691191	11.547
Cleveland (1912)	158 49 17.23	338 47 56.90	3.9568293	5.626
Crow (1912)	165 29 11.90	345 27 16.10	4.2736010	11.667
Newman (1912)	204 41 18.77	244 43 50.78	4.1704023	9.199
Gustine (1912)	230 36 21.94	50 39 43.78	4.0269475	6.611
Stack (1912)	260 34 00.83	80 38 10.83	4.0143355	6.422
Barreillas (1912)	345 11 30.55	165 13 30.43	4.2836434	11.940
Crow (1915)	165 29 11.90	345 27 16.10	4.2736020	11.667
South End Barn (1915)	229 06 36.52	49 14 42.83	4.4174049	16.246
Gustine (1915)	230 36 25.84	50 39 47.69	4.0269572	6.612
Fairmont (1915)	257 15 47.61	77 23 45.43	4.3003126	12.407
Underwood (1915)	270 14 01.90	90 23 17.20	4.3552129	14.079
Ingomar (1915)	277 34 42.96	97 39 17.07	4.0525214	7.012
Milepost 162 (1915)	288 14 44.19	108 23 12.31	4.3397688	13.587
Los Banos Tank (1915)	303 33 32.17	123 42 32.58	4.4239815	16.494
Romero (1915)	314 56 31.66	134 59 22.97	3.9951898	6.145

CLOVIS, FRESNO COUNTY, CALIF. (Not occupied.)

Station is a large steel water tank in the town of Clovis, which is on the Southern Pacific R. R., about 9 miles northeast of Fresno.

[Latitude 36° 49′ 26.265″. Longitude 119° 41′ 55.561″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fresno	39 34 27.92	219 31 15.51	4.0974228	7.776
Deep Well	127 24 11.11	307 18 39.37	4.2362237	10.705
Hall	162 23 25.57	342 21 30.56	4.1950005	9.735
Copper	201 27 44.31	21 29 39.34	4.1128144	8.057
Las Palmas	359 30 32.87	179 30 38.21	3.8698088	4.604

COLUMBIA, MADERA COUNTY, CALIF. (Not occupied.)

Station mark: Center of windmill at Miller & Lux Columbia ranch house, east of Firebaugh.

[Latitude 36° 50′ 50.197″. Longitude 120° 21′ 29.842″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Firebaugh	99 08 49.02	279 05 14.98	3.9520097	5.564
Southeast Cottonwood	222 48 46.00	42 52 38.91	4.1424330	8.625
Aliso	232 24 27.10	52 26 00.04	3.6851039	3.009
Aliso Mill	260 02 06.82	80 05 51.98	3.9671745	5.761

COPPER, FRESNO COUNTY, CALIF.

On a high foothill, 8 miles in an air line north-northeast of Clovis. Follow road from Clovis to Copper Mine power station on the San Joaquin Light & Power Co.'s line, thence go east through gate into pasture to first ranch house, thence to spring watering trough near foot of mountain. Buckboards can not be driven to summit.

Signal: Cairn on most northern point of hill.

Station mark: Tablet under cairn.

[Latitude 36° 55′ 57.685″ (1915), 36° 55′ 58.57″ (1908). Longitude 119° 38′ 43.860″ (1915), 119° 38′ 42.97″ (1908).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Adobe (1908)	120 25 30.71	300 17 43.21	4.3477863	.....
Crook (1908)	189 15 02.57	9 16 04.24	4.1971765	.....
Las Palmas (1915)	13 32 42.05	193 30 48.63	4.3017111	12.447
Clovis (1915)	21 29 39.34	201 27 44.31	4.1128144	8.057
Fresno (1915)	30 23 18.70	210 18 11.12	4.4007709	15.636
Chimney (1915)	46 36 03.82	226 30 01.10	4.3144082	12.816
Greenleaf (1915)	77 37 17.12	257 26 49.03	4.4235469	16.478
Deep Well (1915)	85 03 41.45	264 56 14.12	4.2671488	11.495
Hall (1915)	106 50 50.73	286 47 00.34	3.9959738	6.156
Adobe (1915)	120 26 02.75	300 18 15.16	4.3479198	13.844
Oak (1915)	255 09 18.82	75 13 15.78	4.0039318	6.270
Red Mountain (1915)	289 15 33.91	109 24 26.58	4.3669627	14.465
Round (1915)	316 03 47.42	136 08 41.18	4.2426860	10.865
Red Bank (1915)	341 31 42.04	161 33 20.54	4.1085492	7.978
Sanger (1915)	342 11 51.66	162 15 04.29	4.4165379	16.214
Lone Gum (1915)	355 10 26.76	175 10 43.91	3.9249409	5.227

CROW, STANISLAUS COUNTY, CALIF.

On highest point of round foothill 5 miles southwest of Crows Landing, just south of Crow Creek, on land owned by George Crow, and 1.5 miles north of his ranch house. Can drive to foot of hill from almost any direction.

Station mark and signal: A 4 by 4 inch redwood pole, 10 feet long, having 3-foot cross targets, and set 3 feet in the ground.

Reference mark: A bronze triangulation tablet set in rock 3.9 feet south of signal. True azimuth from station to reference mark, 355° 11′.

[Latitude 37° 21′ 25.814″. Longitude 121° 08′ 49.339″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Orestimba (1908)	61 58 05.31	241 55 14.85	3.8942543	4.871
Black Gulch (1908)	146 31 47.61	326 28 58.19	4.0944841	7.724
Kern (1908)	154 46 22.64	334 43 24.32	4.2281635	10.508
Patterson (1908)	185 50 14.80	5 50 46.97	4.1070391	7.950
Crows Landing (1908)	239 24 05.94	59 26 47.20	3.8803463	4.717
Newman (1908)	293 25 33.12	113 30 01.38	4.0744560	7.376
Christian (1908)	345 27 16.10	165 29 11.90	4.2736010	11.667
Cleveland (1908)	351 35 06.66	171 35 42.08	3.9929778	6.114
South End Barn (1915)	272 27 04.59	92 37 07.81	4.3890577	15.220
School (1915)	279 33 20.85	99 42 01.03	4.3306488	13.305
Gustine (1915)	311 25 58.53	131 31 16.64	4.2368543	10.720
Christian (1915)	345 27 16.10	165 29 11.90	4.2736020	11.667

CRUMLEY, MADERA COUNTY, CALIF.

On the southwest bank of a reservoir 400 feet southwest of Mr. Crumley's house, which is about 2 miles southwest of Berenda, a station on the Southern Pacific R. R. between Merced and Madera.

Signal: Lumber structure with cross targets.

Station mark: Iron bench mark centered under signal.

[Latitude 37° 01′ 02.666″. Longitude 120° 10′ 00.704″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Miller & Lux Signal	1 37 21.78	181 37 15.43	3.9652420	5.736
Southeast Cottonwood	41 11 02.99	221 07 57.90	4.0630925	7.185
Fuller	74 54 29.19	254 51 47.84	3.8365911	4.265
Chowchilla	145 19 40.99	325 16 17.00	4.1668480	9.124
Fairmead	161 28 13.69	341 27 19.25	3.8465001	4.364
Sharon	199 11 33.52	19 12 51.71	3.9888415	6.056
Berenda School	208 56 01.75	28 56 32.28	3.4133365	1.609
Talbot	261 07 30.62	81 12 31.13	4.0963184	7.757
Madera	303 57 40.42	124 01 29.82	4.0558576	7.067
Italian Service Colony	330 26 08.42	150 28 18.92	4.0367511	6.762

DAULTON, MADERA COUNTY, CALIF.

On a hill on which are scattered scrubby oaks, about 1 mile north of Daulton station.

Signal: Flag in southern one of two trees on highest point. There is a cross on rock just south of tree.

Station mark: Tablet 37 feet west from signal.

Position of signal computed. Azimuth from tablet to signal, 242° 54′; distance, 37.2 feet.

[Latitude 37° 07′ 55.785″. Longitude 119° 58′ 58.006″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Talbot	20 30 08.46	200 28 29.77	4.0625406	7.176
Sharon	75 01 18.90	254 55 57.30	4.1342778	8.465
Marguerite	100 52 19.07	280 45 23.21	4.2381142	10.751
Flat Top	143 52 27.87	323 47 50.27	4.2830273	11.923
Green	177 24 01.20	357 23 44.70	4.1713441	9.219
Rabbit	263 37 59.82	83 39 53.11	3.6684214	2.896
Adobe	315 09 25.36	135 13 48.96	4.1853125	9.521

DEEP WELL, MADERA COUNTY, CALIF.

On north and south fence, 0.5 mile south of Madera and Friant road, at a point 1 mile more or less west of the Deep Well School.

Signal: Lumber structure with cross targets.

Station mark: Iron bench mark centered under signal.

[Latitude 36° 55′ 05.375″. Longitude 119° 51′ 08.444″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Kearney	15 09 21.55	195 07 07.43	4.3523742	13.987
Biola	48 03 30.59	227 57 47.61	4.2900607	12.117
Greenleaf	61 09 57.00	241 06 56.07	3.9303794	5.293
Madera	104 07 08.92	283 59 37.46	4.2824698	11.907
Service	131 40 30.58	311 38 01.94	3.9133288	5.090
Adobe	176 24 35.75	356 24 16.08	4.1106596	8.017
Hall	243 21 41.64	63 25 18.76	3.9999819	6.213
Copper	264 56 14.12	85 03 41.45	4.2671488	11.495
Clovis	307 18 39.37	127 24 11.11	4.2362237	10.705
Fresno	344 03 03.43	164 05 22.21	4.3202756	12.990
Bullard flagpole	347 13 53.11	167 14 35.42	3.8977887	4.911

DELTA, MERCED COUNTY, CALIF.

Station is the center of water tank at the Miller & Lux Delta ranch, about 7 miles northeast of Los Banos, a town on the Southern Pacific R. R.

[Latitude 37° 07′ 02.919″. Longitude 120° 44′ 21.145″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Los Banos Tank	56 22 06.81	236 18 16.64	4.0540401	7.037
Milepost 162	98 15 23.27	278 11 00.31	4.0360915	6.752
Highland	154 57 41.65	334 56 43.03	3.7527901	3.517
San Juan	298 59 57.09	119 02 56.36	3.9239558	5.216
Power	345 13 46.24	165 14 30.62	3.8533472	4.433

DERRICK, FRESNO COUNTY, CALIF.

Oil-well derrick 200 feet southwest of a levee connecting Fish and Fresno sloughs and about 3 miles east of San Joaquin, a town on the Hanford & Summit Lake branch of the Southern Pacific R. R.

Signal: 100-foot oil derrick.

Reference mark: Center of 8-inch casing of deep well, 1 foot south of center of signal.

[Latitude 36° 36′ 41.406″. Longitude 120° 08′ 17.405″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cantua	62 39 20.40	242 30 52.34	4.3782577	14.846
San Joaquin Tank	83 07 06.39	263 05 18.87	3.6544898	2.804
Borland	113 43 21.33	293 36 32.91	4.2685567	11.532
Hermanhouse	133 13 52.11	313 07 30.17	4.3378948	13.528
Kings	135 19 55.19	315 16 44.34	4.0528116	7.017
Jamesan	156 25 30.78	336 23 07.66	4.1722098	9.238
Sandy	198 36 05.64	18 36 34.98	3.5830924	2.379
Kerman	209 12 20.41	29 15 07.64	4.1535698	8.850
Kearney	237 54 21.32	58 02 14.14	4.3653550	14.411
McMullin	250 56 35.93	71 02 55.60	4.1996952	9.841

DINUBA, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: Center of high red wooden tank in Dinuba.

[Latitude 36° 32′ 35.956″. Longitude 119° 23′ 09.989″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Round	160 12 53.79	340 08 32.00	4.5123564	20.217
Campbell	169 32 55.96	349 31 40.94	4.2357838	10.694
Smith	220 12 10.64	40 13 38.20	3.7529353	3.518

DOS PALOS, FRESNO COUNTY, CALIF.

Center of tank house supplying water to Dos Palos.

Signal: Flagpole on top of tank house.

Station mark: Artesian well in center of tank house.

[Latitude 36° 59′ 14.169″. Longitude 120° 37′ 31.018″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hollingsworth	4 02 48.36	184 02 28.04	4.0744041	7.375
Ora Loma	32 07 27.71	212 04 27.23	4.1457490	8.692
White	66 58 01.41	246 50 14.77	4.3197460	12.975
San Juan	164 57 33.16	344 56 25.16	4.0312537	6.677
Belmont	181 53 56.30	1 54 00.79	3.7452289	3.456
Johnson	229 10 14.95	49 13 16.17	4.1165906	8.127
Golden Hoof	288 04 39.19	108 09 08.30	4.0661607	7.236

DRESSER, SAN LUIS OBISPO COUNTY, CALIF.

On a small hill about 8 miles east-southeast of Paso Robles and on land owned by Mr. Dresser. From Paso Robles take the Creston road until first schoolhouse is passed (about 7 miles), continue on same road to first ranch on left (¼ mile), then turn north up lane to summit of ridge, thence go through a fence and east along ridge until highest point is reached. All oak trees were cut on the summit. The next hill east of this point is bald but lower than the point used.

Signal: An oak tree planted in the ground on the highest point.

Station mark: A triangulation tablet set in rock. Position of tablet computed. Azimuth from tablet to signal, 209° 35′; distance, 0.45 meter.

[Latitude 35° 34′ 55.762″. Longitude 120° 34′ 20.737″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Juhl	70 34 26.80	250 25 12.97	4.4058368	15.819
Rocky Butte	102 00 00.26	281 43 00.18	4.6535228	27.982
Fair Oaks	108 58 09.39	288 50 25.90	4.3258150	13.157
Semas	146 13 51.66	326 05 03.50	4.6107150	25.355
Vineyard	157 58 18.82	337 54 46.84	4.3861901	15.120
Estrella	195 41 38.63	15 43 27.76	4.2403727	10.807
Castle Mount	207 54 36.29	28 02 45.92	4.6519052	27.878

DUNKARD, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: Center of cupola of Dunkard School.

[Latitude 36° 42′ 49.875″. Longitude 119° 59′ 46.616″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Kerman	100 36 36.21	280 34 18.25	3.7653452	3.620
Kearney	262 16 53.12	82 19 41.12	3.8473695	4.372
McMullin	339 46 33.74	159 47 28.68	3.8201001	4.106

EADE, MONTEREY COUNTY, CALIF.

On flat ridge 8 or 9 miles east of King City. It can be reached by taking Lonoak road from King City for about 5 miles, thence turn to right and go up canyon passing Herman Eade's ranch to forks of road; thence take right-hand road and continue up canyon until oak trees on right -hand side of slope of ridge are reached. Signal is on top of ridge to south. Can continue up canyon to top of ridge and drive back on ridge to station, but 2 miles will be saved by walking up.

Signal: An oak tree trimmed.

Station mark: A triangulation tablet in rock 1.7 meters from the signal tree; azimuth from signal to tablet, 149°.

[Latitude 36° 13′ 31.688″ (1917), 36° 13′ 31.91″ (1909). Longitude 120° 58′ 08.997″ (1917), 120° 58′ 09.20 (1909).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bishoff (1909)	79 26 01.25	259 17 50.12	4.3249351	.....
King City (1909)	86 37 14.23	266 31 40.74	4.1498586	.....
Pinalito (1909)	135 48 10.90	315 44 19.63	4.1457788	.....
Williams (1917)	5 23 40.36	185 22 32.97	4.4842617	18.950
Pine Creek (1917)	59 51 58.55	239 42 49.12	4.4302126	16.733
Santa Lucia (1917)	77 48 34.75	257 32 40.11	4.6165346	25.697
Bishoff (1917)	79 26 08.61	259 17 57.41	4.3250001	13.133

EASTIN SCHOOL, MADERA COUNTY, CALIF.

Signal and station mark: Cupola of Eastin School, about 6 miles south and 1 mile east of Madera.

[Latitude 36° 51′ 58.952″. Longitude 120° 00′ 33.214″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Biola	3 57 34.34	183 57 22.10	3.8643524	4.547
Gallagher	55 46 21.12	235 42 32.50	4.0581272	7.104
Last Chance	87 51 11.42	267 45 57.19	4.1134044	8.068
Madera	156 05 12.00	336 03 20.02	4.0561051	7.071
Greenleaf	255 54 34.49	75 57 12.56	3.8277556	4.179
Herndon	290 13 26.25	110 16 50.16	3.9531716	5.579

EAST STACK, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: Eastern one of two stacks at pump station, west of Standard Oil (Mendota) tanks pump station.[1]

[Latitude 36° 36′ 08.599″. Longitude 120° 24′ 19.293″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Telephone	135 33 47.10	315 29 52.69	4.1438113	8.653
Herman House	206 41 15.81	26 44 28.41	4.2506831	11.067
Cantua	344 48 34.08	164 49 39.00	4.0149715	6.432

ELKHORN, SAN BENITO COUNTY, CALIF.

On the south end of a high hill, which has oak trees on north end and is bald on south end, about 3 miles northeast of Elkhorn. Station is owned by T. S. Ingels, who lives 14 miles from Tres Pinos, on the New Idria road. It can be reached from Elkhorn by going on steep road to Mr. Joseph Thomas's ranch, thence on horseback to summit of hill. Land on which station is situated is owned by Mr. Thomas.

Signal: An oak tree set 3 feet in the ground.

Station mark: A U. S. G. S. triangulation tablet under center of station. Position of tablet computed.

[Latitude 36° 41′ 34.045″ Longitude 121° 08′ 34.043.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chalone	9 46 15.24	189 44 23.36	4.4402035	17.122
Harris	24 10 25.50	204 07 37.81	4.2322725	10.608
Armstrong	59 28 21.12	239 22 13.21	4.2499493	11.048
Paicines	115 27 28.12	295 12 36.26	4.2085915	10.045
Quiensabe	155 44 29.70	335 41 46.65	4.2157235	10.211
Peak	182 27 07.02	2 27 21.83	4.1565683	8.911
Meco	228 55 45.05	48 58 49.34	4.0060857	6.301

EL NIDO, MERCED COUNTY, CALIF. (Not occupied.)

Station is center of windmill tower at the El Nido School, about 10 miles west of Chowchilla, a town on the Southern Pacific R. R.

[Latitude 37° 08′ 03.961″. Longitude 120° 29′ 27.187″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Johnson	14 47 42.07	194 46 51.86	3.9059507	5.004
Rodgers	75 56 05.06	255 54 56.92	3.4582780	1.785
Ash	302 07 41.59	122 11 44.83	4.0704060	7.307

[1] These stacks have since been destroyed.

ESTRELLA, SAN LUIS OBISPO COUNTY, CALIF.

On a bald hill on the Estrella ranch, about 15 miles from San Miguel. Go from San Miguel by Estrella post office to Bern post office, thence east and north over small ridge to Freeman Canyon, and up this canyon until a gate is reached. Follow the road through this gate until it crosses the canyon, then turn west. An orchard and water trough can be seen on the west side of the fence. Go through a gate at this place thence northwest up ridge to signal. A buckboard or Ford car can be driven to signal.

Signal: An oak tree set in the ground.

Station mark: A rock with chiseled cross on it. No tablet was set in this rock, as it was very hard and broke both drills. There is no other rock on the hill, and this one had to be hauled there. Position of mark was computed. Azimuth from mark to signal, 56° 14′; distance, 0.60 meter.

[Latitude 35° 43′ 59.033″. Longitude 120° 31′ 13.520″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Dresser	15 43 27.76	195 41 38.63	4.2403727	10.807
Fair Oaks	68 17 22.55	248 07 48.99	4.4252600	16.543
Vineyard	112 49 22.33	292 44 00.56	4.1761640	9.322
Stone Canyon	174 45 31.19	354 47 22.27	4.5123908	20.218
Castle Mount	215 27 50.43	35 34 11.34	4.4488243	17.465

EYRAND, MERCED COUNTY, CALIF.

High cement silo on the Eyrand ranch, about 7 miles southeast of Atwater, and about 10 miles southwest of Merced. To reach it go south from Merced 2 miles, thence west 4 miles, thence south 4 miles.

Signal and station mark: Center of cement silo about 50 feet high. It can be occupied.

[Latitude 37° 13′ 39.373″. Longitude 120° 33′ 12.086″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Merced	215 11 47.93	35 14 20.54	4.0321314	6.691
Alfarata	241 45 12.13	61 49 13.55	4.0650404	7.218
Lord	295 48 17.73	115 52 11.55	4.0250777	6.583
Honn	317 32 57.40	137 36 31.72	4.1128238	8.057
Rodgers	345 55 31.82	165 56 52.64	4.0564102	7.076

FAIRMEAD, MADERA COUNTY, CALIF. (Not occupied.)

Station is center of steel water tank at town of Fairmead, on the Southern Pacific R. R. between Chowchilla and Madera.

[Latitude 37° 04′ 38.657″. Longitude 120° 11′ 31.055″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fuller	27 28 48.62	207 27 01.59	3.9786933	5.916
Berenda Slough	61 23 15.80	241 18 24.28	4.1343554	8.467
Ash	90 16 18.75	270 09 33.15	4.2205790	10.326
Chowchilla	131 29 42.34	311 27 12.715	3.9124851	5.080
Sharon	244 53 14.16	64 55 26.89	3.7783343	3.730
Crumley	341 27 19.25	161 28 13.69	3.8465001	4.364

FAIRMONT, MERCED COUNTY, CALIF.

Tank house at the Miller & Lux Fremont ranch. To reach ranch from Gustin go south 2 miles and east 6 miles.

Signal and station mark: Center of tank.

[Latitude 37° 13′ 58.293″. Longitude 120° 52′ 28.063″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bareillas	32 29 59.59	212 24 02.62	4.4346644	16.905
Ingomar	54 43 56.54	234 40 33.03	4.0072640	6.318
Christian	77 23 45.43	257 15 47.61	4.3002126	12.407
Gustine	101 55 54.01	281, 51 17.80	4.0605287	7.143
Underwood	324 50 18.74	144 51 36.50	3.7408993	3.422
Milepost 162	353 35 07.72	173 35 38.69	4.0539241	7.035

FAIR OAKS, SAN LUIS OBISPO COUNTY, CALIF.

On highest point of a ridge about 8 miles a little north of west of Paso Robles, on the next place west of the San Ignacio ranch owned by Paderewski. Take the Paso Robles and Adelaida road for about 7 miles or until the summit is reached (elevation U. S. G. S., 1,940); at this point leave road and go south in pasture to highest point of ridge (about 0.5 mile in distance and 400 feet in elevation). All timber was cut from the point, and an oak tree was set in the ground for a signal.

Station mark: Tablet set in a rock placed 0.92 meter west of signal. Position of tablet was computed. Azimuth from tablet to signal, 274° 50′; distance, 0.92 meter.

[Latitude 35° 38′ 38.369″. Longitude 120° 47′ 36.689″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Juhl	14 25 24.86	194 23 53.67	4.2002766	9.854
Rocky Butte	95 45 52.62	275 36 35.73	4.3829363	15.007
Lynch	129 12 24.90	309 05 42.01	4.3497869	13.904
Williams	151 17 43.97	331 10 27.19	4.5906538	24.210
Semas	174 15 32.89	354 14 29.55	4.4340556	16.881
Vineyard	214 41 01.53	34 45 14.03	4.2808062	11.862
Castle Mount	231 15 34.56	51 31 30.06	4.7201779	32.623
Estrella	248 07 48.99	68 17 22.55	4.4252600	16.543
Dresser	288 50 25.90	108 58 09.39	4.3258150	13.157

FAUCHER MONUMENT, MERCED COUNTY, CALIF.

A granite tombstone about 50 feet high, erected in memory of George Hicks Faucher, and inscribed "Born in New York State Feb. 9, 1828. Died in California, March 30, 1900," at a station on the Atchison, Topeka & Santa Fe Ry. called Tuttle, about 5 miles east of Merced.

Signal and station mark: Center of monument.

[Latitude 37° 17′ 44.646″. Longitude 120° 22′ 40.328″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Alfarata	68 47 44.74	248 45 33.64	3.7573088	3.554
Merced	97 33 34.19	277 29 44.07	3.9746697	5.862
Blacksmith	177 06 32.73	357 06 17.29	4.0937954	7.712
Hurricane	211 05 12.59	31 06 50.86	3.8879045	4.800
Planada	278 10 42.96	98 12 41.59	3.6877652	3.028
Le Grand	283 45 10.56	103 50 07.34	4.0943978	7.722

FIREBAUGH, FRESNO COUNTY, CALIF.

Windmill without wheel at a hotel in Firebaugh owned by L. Pucciwelli.
Signal: Mill frame on tank platform.
Station mark: Pipe in well under mill.

[Latitude 36° 51′ 36.223″. Longitude 120° 27′ 26.707″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Miller No. 3	38 39 47.79	218 36 06.91	4.1654803	9.096
Miller Headquarters	58 23 55.72	238 20 22.21	4.0155529	6.440
Silaxo	107 15 42.11	287 13 06.31	3.8282818	4.184
Silaxo stack	126 57 48.06	306 55 23.90	3.8717451	4.625
Golden Hoof	159 42 42.40	339 41 08.11	4.0488641	6.954
West Power	176 49 09.48	356 48 59.36	3.8762201	4.673
Syphon	206 38 32.69	26 41 36.55	4.2272448	10.486
Southeast Cottonwood	244 19 48.74	64 27 11.90	4.3067411	12.592
Aliso	263 03 16.23	83 08 23.29	4.1061723	7.935
Aliso Mill	269 21 52.57	89 29 07.79	4.2546146	11.168
Columbia	279 05 14.98	99 08 49.02	3.9520097	5.564
Helm	313 41 39.36	133 44 33.14	3.9973857	6.176

FLAT TOP, MARIPOSA COUNTY, CALIF.

On a flat, rocky hill, 10 miles east of Le Grand, a station on the Atchison, Topeka & Santa Fe Ry. Take road east from Le Grand 7 miles to ranch house on creek, turn in gate west of ranch house, thence follow left-hand road inside of gate to station.
Signal: Cairn 7 feet high.
Station mark: Tablet under center of cairn.

[Latitude 37° 16′ 18.291″. Longitude 120° 06′ 37.152″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Sharon	5 28 20.74	185 27 36.12	4.2812386	11.874
Marguerite	24 49 29.32	204 47 10.49	4.1299824	8.382
Red Tank	21 51 49.23	201 50 37.68	3.8937089	4.865
Chowchilla	39 38 57.84	219 32 30.19	4.3215165	13.028
La Branza	60 33 03.79	240 25 24.07	4.3330243	13.377
Le Grand School	69 28 59.53	249 23 50.78	4.1279427	8.342
Le Grand	88 33 37.80	268 28 51.22	4.0668279	7.247
Hurricane	115 15 13.87	295 07 08.26	4.3384349	13.545
Blacksmith	121 49 44.89	301 39 45.25	4.4566259	17.782
West Butte	146 45 19.51	326 40 51.91	4.2963446	12.294
Green	273 33 47.77	93 38 09.27	4.0277939	6.624
Rabbit	313 08 26.65	113 14 57.74	4.3400157	13.595
Daulton	323 47 50.27	143 52 27.87	4.2830273	11.923

FOWLER, FRESNO COUNTY, CALIF. (Not occupied. No check.)

The high black steel tank in the town of Fowler.
Station mark: Center of tank.

[Latitude 36° 37′ 48.607″. Longitude 119° 40′ 29.976″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fresno	139 35 42.34	319 31 39.24	4.1924664	9.679
Round	215 07 40.97	35 13 37.15	4.4091957	15.942

FREMONT, SAN BENITO AND MONTEREY COUNTIES, CALIF. (Not occupied.)

Highest point of Fremont Peak, a well-known mountain about 10 miles southwest of Hollister.

[Latitude 36° 45′ 27.105″. Longitude 121° 30′ 12.293″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Quien Sabe	252 52 25.44	73 02 39.82	4.4248932	16.529
Paicines	270 44 50.36	90 51 55.13	4.2457276	10.942
Armstrong	313 43 52.00	133 50 39.40	4.3702053	14.573

FRESNO COURTHOUSE, FRESNO COUNTY, CALIF.

Signal: Cupola on courthouse.

Station mark: Center of cupola on courthouse.

[Latitude 36° 44′ 13.207″. Longitude 119° 47′ 16.907″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Kearney	82 04 54.17	262 00 21.89	4.0697740	7.297
Biola	109 16 39.85	289 08 39.24	4.3313870	13.327
Greenleaf	140 29 17.04	320 23 57.78	4.3168404	12.888
Bullard Flagpole	162 09 36.12	342 07 59.68	4.1147057	8.092
Chimney	163 14 19.68	343 13 24.90	3.8957436	4.888
Deep Well	164 05 22.21	344 03 03.43	4.3202756	12.990
Adobe	168 48 02.27	348 45 23.68	4.5266352	20.892
Hall	187 26 22.98	7 27 40.80	4.3943012	15.405
Copper	210 18 11.12	30 23 18.70	4.4007709	15.636
Clovis	219 31 15.51	39 34 27.92	4.0974228	7.776
Oak	222 42 02.32	42 51 06.41	4.5198238	20.567
Round	249 46 51.75	69 56 52.01	4.4229203	16.454
Las Palmas	254 23 38.37	74 26 52.16	3.9212635	5.183
Sanger	278 31 54.90	98 40 13.87	4.3210465	13.014
Fowler	319 31 39.24	139 35 42.34	4.1924664	9.679

FULLER, MADERA COUNTY, CALIF.

On the bank of Mr. Fuller's reservoir. It can be reached by following road due south from Chowchilla 9 miles to the Fuller ranch.

Signal: Lumber structure with cross targets.

Station mark: Iron bench-mark post centered under signal.

[Latitude 37° 00′ 04.605″. Longitude 120° 14′ 28.744″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Southeast Cottonwood	8 04 38.18	188 04 14.33	3.8442016	4.341
Syphon	87 06 19.91	267 01 49.03	4.0674339	7.257
Berenda Slough	104 13 09.51	284 10 05.20	3.8925604	4.852
Chowchilla	172 51 30.72	352 50 48.32	4.1452213	8.681
Fairmead	207 27 01.59	27 28 48.62	3.9786933	5.916
Crumley	254 51 47.84	74 54 29.19	3.8365911	4.265
Madera	285 49 32.04	105 56 02.64	4.2226242	10.375

GALLAGHER, FRESNO COUNTY, CALIF.

Station is a windmill on the north side of James Gallagher's tank house, 0.5 mile south of San Joaquin River and about 8 miles north-northwest of Kerman.

Signal: Windmill.

Station mark: Iron pipe in well under mill.

[Latitude 36° 48′ 30.178″. Longitude 120° 06′ 54.537″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Jamesan	44 13 42.21	224 10 29.16	4.0596341	7.128
Mill Tank	81 58 09.38	261 55 34.88	3.8100167	4.012
Aliso Mill	115 16 03.59	295 10 59.87	4.1422972	8.623
Last Chance	149 17 03.68	329 15 38.28	3.8394367	4.293
Madera	195 58 38.45	16 00 35.41	4.2433982	10.883
Eastin	235 42 32.50	55 46 21.12	4.0581272	7.104
Biola	275 29 14.74	95 32 50.98	3.9537156	5.586
Kerman	332 32 45.72	152 34 43.74	4.0258373	6.595

GOLDEN HOOF, FRESNO COUNTY, CALIF.

Station is windmill on west side of tank house at the Miller & Lux Golden Hoof ranch, 7 miles southeast of Dos Palos.

Signal: Windmill.

Station mark: Center of well under mill.

[Latitude 36° 57′ 16.708″. Longitude 120° 30′ 03.550″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Silaxo	16 40 44.61	196 39 42.84	3.9480607	5.513
Miller Head	17 13 45.61	197 11 45.99	4.2221530	10.363
Silaxo Stack	18 55 04.61	198 54 14.51	3.8038730	3.956
Miller No. 2	46 00 16.75	225 55 03.54	4.2544780	11.164
Hollingsworth	55 26 25.97	235 21 36.88	4.1605565	8.993
Ora Loma	66 05 44.56	245 58 15.37	4.3065781	12.587
White	81 31 10.80	261 18 55.45	4.4861133	19.031
Dos Palos	108 09 08.30	288 04 39.19	4.0661607	7.236
Belmont	130 11 28.83	310 07 04.05	4.1533735	8.845
San Juan	135 20 48.85	315 15 11.46	4.2943323	12.237
Bridge	159 18 47.73	339 17 04.66	4.0783409	7.442
Johnson	174 33 45.71	354 32 17.49	4.0871288	7.594
Ash	218 23 50.80	38 28 15.43	4.2425475	10.862
Syphon	248 08 20.86	68 12 59.26	4.0910395	7.663
Southeast Cottonwood	274 24 37.50	94 33 35.42	4.3465805	13.802
West Power	310 45 46.99	130 47 11.12	3.6603027	2.842
Firebaugh	339 41 08.11	159 42 42.30	4.0488641	6.954

GRANVILLE, FRESNO COUNTY, CALIF. (Not occupied.)

Granville School, 4 miles northwest of Sanger.

Signal and station mark: Center of cupola.

[Latitude 36° 44′ 08.493″. Longitude 119° 34′ 58.488″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Las Palmas	103 05 45.01	283 01 37.02	4.0235123	6.559
Round	215 15 04.46	35 17 42.61	4.0547474	7.049
Campbell	286 57 25.32	107 03 13.71	4.1796546	9.397
Sanger	321 24 06.59	141 25 04.02	3.5822222	2.375

GRAVES, MONTEREY COUNTY, CALIF. (Not occupied.)

Large pine tree near the summit of Bald Hill, owned by Mr. Graves. About 5 miles south of Lockwood.

Station mark: Center of tree.

[Latitude 35° 51′ 50.857″. Longitude 121° 07′ 25.449″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Williams	228 41 05.58	48 45 24.83	4.1687794	9.165
Lynch	309 24 31.63	129 29 23.34	4.2096584	10.069
Rocky Butte	345 04 45.77	165 07 02.18	4.3578927	14.166

GREEN, MARIPOSA COUNTY, CALIF.

On a bald hill, locally known as Green Mountain. The Green Mountain copper mine is just under the hill on the south side. The road from Raymond to Mariposa passes within a mile of the hill at Seaton's saloon, 8 miles from Raymond. Animals can be ridden to the point.

Signal: Cairn 8 feet high.

Station mark: Triangulation tablet; azimuth to signal, 146°; distance, 1.10 meters.

Latitude 37° 15′ 56.92″ (1908), 37° 15′ 56.579″ (1915). Longitude 119° 59′ 24.51″ (1908), 119° 59′ 25.318″ (1915).

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bullion (1908)	173 21 50.63	353 20 24.66	4.4782044	
Moore Hill (1908)	181 21 24.88	1 21 33.01	4.1437321	
Devil (1908)	217 03 19.18	37 12 26.66	4.5650238	
Raymond (1908)	233 57 48.00	54 13 23.09	4.6699597	
Deadwood (1908)	258 46 08.37	78 57 13.77	4.4404747	
Adobe (1908)	335 54 45.56	155 59 26.04	4.4490909	
Rabbit (1908)	339 38 28.41	159 40 38.41	4.1833582	
Sharon (1915)	34 14 30.93	214 09 25.33	4.3461516	13.788
Marguerite (1915)	54 41 14.52	234 34 34.53	4.3009786	12.426
Red Tank (1915)	64 06 03.16	244 00 30.31	4.1783613	9.369
Le Grand (1915)	91 01 19.60	270 52 11.55	4.3483662	13.858
Flat Top (1915)	93 38 09.27	273 33 47.77	4.0277939	6.624
West Butte (1915)	128 45 55.93	308 37 06.40	4.4397964	17.106
Rabbit (1915)	339 38 57.68	159 41 07.65	4.1834615	9.480
Daulton (1915)	357 23 44.70	177 24 01.20	4.1713441	9.219

GREENLEAF, MADERA COUNTY, CALIF.

A red tank, belonging to the railroad company, at Greenleaf, a station on the Atchison, Topeka & Santa Fe Ry., 8 miles southeast of Madera.

Signal and station mark: Center of tank.

[Latitude 36° 52′ 51.990″. Longitude 119° 56′ 09.788″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Biola	38 13 39.73	218 10 49.56	4.0557672	7.065
Eastin	75 57 12.56	255 54 34.49	3.8277556	4.179
Madera	128 14 55.34	308 10 25.10	4.1514200	8.806
Service	187 57 38.84	7 58 11.29	3.9844702	5.995
Adobe	201 20 41.41	21 23 22.94	4.2610799	11.335
Deep Well	241 06 56.07	61 09 57.00	3.9303794	5.293
Hall	242 18 04.46	62 24 42.50	4.2675243	11.505
Copper	257 26 49.03	77 37 17.12	4.4235469	16.478
Bullard Flagpole	291 17 44.83	111 21 27.91	3.9950910	6.144
Fresno	320 23 57.78	140 29 17.04	4.3168404	12.888

GRUBER, FRESNO COUNTY, CALIF. (Not occupied.)

Station is windmill at Mr. Gruber's ranch, about 8 miles west of Mendota, a small town on the Southern Pacific R. R.

[Latitude 36° 45′ 47.136″. Longitude 120° 37′ 50.062″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tierra Loma	31 44 36.66	211 43 38.63	3.6604027	2.843
Panoche	70 54 13.27	250 49 26.18	4.1004317	7.830
Shell No. 1	103 43 06.23	283 41 06.99	3.7062818	3.160
Miller No. 2	171 08 23.60	351 07 50.56	3.9480559	5.513
Miller No. 3	276 04 07.38	96 06 39.79	3.8029572	3.947

GUSTINE, MERCED COUNTY, CALIF.

The cupola of Catholic Church in Gustine.

Signal: Center of cupola.

Station mark: Center of cupola.

[Latitude 37° 15′ 15.143″. Longitude 121° 00′ 04.458″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bareillas	7 30 19.34	187 28 57.84	4.4073108	15.873
Christian	50 39 47.69	230 36 25.84	4.0269572	6.612
Cleveland	98 25 05.77	278 20 23.36	4.0651103	7.219
Crow	131 31 16.64	311 25 58.53	4.2368543	10.720
South End Barn	228 08 37.94	48 13 19.20	4.1906513	9.639
Fairmont	281 51 17.80	101 55 54.01	4.0605287	7.143

HALL, MADERA COUNTY, CALIF.

On top of a hill on the west bank of San Joaquin River, about 2 miles southwest of Friant. The Madera-Friant road passes the north end of the hill about 0.5 mile from signal.

Position of signal computed.

Station mark and signal: Timber with black and white cross targets.

Reference mark: Aluminum tablet. Azimuth from tablet to signal, 114° 08′; distance, 4.8 feet.

[Latitude 36° 57 0.666″. Longitude 119° 45′ 07.153″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fresno	7 27 40.80	187 26 22.98	4.3943012	15.405
Greenleaf	62 24 42.50	242 18 04.46	4.2675243	11.505
Deep Well	63 25 18.76	243 21 41.64	3.9999819	6.213
Adobe	130 47 43.97	310 43 46.88	4.1093124	7.992
Copper	286 47 00.35	106 50 50.73	3.9959738	6.156
Round	305 30 54.68	125 39 38.61	4.4245034	16.514
Clovis	342 21 30.56	162 23 25.57	4.1950005	9.735

HARRIS, SAN BENITO COUNTY, CALIF.

On a brushy mountain about 12 miles from San Benito and about 1 mile south of Mr. Harris's ranch. From San Benito take the Hollister road through Bear Valley to Mr. Henry Melendy's ranch, thence go through a gate on the Salinas Valley road to Mr. Harris's ranch. This is as far as a wagon can be taken. From Mr. Harris's ranch go south up ridge to the highest point. Animals can be ridden all the way up.

Signal: A pine tree set 3 feet in the ground.

Station mark: A tablet set in rock placed in ground. Azimuth from tablet to signal, 87° 03′; distance, 1.10 meters.

[Latitude 36° 33′ 08.688″. Longitude 121° 13′ 15.137″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Armstrong	128 07 01.67	308 03 41.89	4.0248336	6.579
Quien Sabe	180 24 06.89	0 24 12.06	4.4851199	18.988
Elkhorn	204 07 37.81	24 10 25.50	4.2322725	10.608
Meco	213 18 21.43	33 24 13.23	4.4252340	16.542
Call	245 36 43.70	65 42 21.44	4.1893173	9.609
Martin	304 03 17.92	124 07 37.33	4.1171623	8.138
Lone Pine	306 10 21.70	126 12 14.29	3.7656121	3.622
Chalone	348 39 05.71	168 40 01.22	4.0722502	7.338

HELLMAN, SAN LUIS OBISPO COUNTY, CALIF

On a low hill about 4.5 miles northwest of San Miguel. The road to the Hellman ranch passes under the foot of the hill, and a buckboard was driven to the summit, which is the flat top of a ridge. There are oak trees on the ridge but none within 100 yards of the signal.

Signal: A redwood post 4 by 4 inches and 16 feet long, set about 4 feet in the ground, with two white targets 3 feet square at right angles to each other on it.

Station mark: A triangulation tablet set in a rock placed in the ground 1.34 meters. a little east of north of signal. The position of the tablet was determined. Azimuth from tablet to signal, 18° 22′; distance, 1.34 meters.

[Latitude 35° 46′ 41.123″. Longitude 120° 46′ 06.249″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lynch	87 52 15.54	267 44 39.13	4.2927839	12.194
Williams	132 36 50.54	312 28 40.07	4.4549712	17.714
Powell	190 33 50.48	10 35 39.07	4.4031826	15.723
Vineyard	264 34 04.51	84 37 24.55	3.9360395	5.363

HELM, FRESNO COUNTY, CALIF.

Tank house at the Miller & Lux Helm ranch, 4 miles north of Mendota.

Signal: Center of tank house.

Station mark: Center of concrete floor of tank house.

[Latitude 36° 47′ 53.367″. Longitude 120° 22′ 36.808″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Telephone	46 13 39.50	226 08 43.25	4.2310930	10.579
Miller No. 3	74 26 16.42	254 19 42.12	4.2293593	10.537
Miller Headquarters	95 10 13.86	275 03 46.83	4.2062559	9.991
Firebaugh	133 44 33.14	313 41 39.36	3.9973857	6.176
Aliso	213 10 34.66	33 12 47.70	4.0018767	6.241
Aliso Mill	236 48 58.18	56 53 19.31	4.1103638	8.012
Hermanhouse	316 48 36.08	136 50 47.79	3.9016663	4.955
Borland	341 50 55.70	161 52 40.46	4.1447886	8.672

HERMANHOUSE, FRESNO COUNTY, CALIF.

Tank house on the Hermanhouse ranch, 6 miles more or less east of Mendota and 0.5 mile north of the Whites Bridge–Fresno road.

Signal and station mark: Center of tank house.

[Latitude 36° 44′ 44.711″. Longitude 120° 18′ 56.822″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Borland	8 30 31.01	188 30 04.18	3.8768482	4.679
Cantua	11 35 29.43	191 33 22.06	4.4221967	16.427
East Stack	26 44 28.41	206 41 15.81	4.2506831	11.067
Shell No. 2	46 35 53.96	226 28 37.35	4.3981829	15.543
Telephone	71 27 51.79	251 20 44.18	4.2724558	11.636
Helm	136 50 47.79	316 48 36.08	3.9016663	4.955
Jamesan	277 17 11.43	97 21 10.56	4.0000079	6.214
Kings	310 51 51.34	130 55 02.44	4.0209628	6.521
Derrick	313 07 30.17	133 13 52.11	4.3378948	13.528

HERNDON, FRESNO COUNTY, CALIF.

Station mark: Center of cupola on schoolhouse at Herndon, a small town on the Southern Pacific R. R. between Madera and Fresno. Later destroyed.

[Latitude 36° 50′ 18.135″. Longitude 120° 54′ 53.225″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Eastin	110 16 50.16	290 13 26.25	3.9531716	5.579
Madera	136 04 07.65	315 58 51.57	4.2734974	11.664

HIGHLAND, MERCED COUNTY, CALIF.

On a small knoll 0.5 mile north of the Miller & Lux Highland ranch and 2.5 miles northeast of the Miller & Lux San Luis ranch; it is 0.25 mile southeast of willow tree, 1 mile west of San Joaquin River, and 0.5 mile north of slough. It can be reached by north and south road from Los Banos to Standard Oil pumping station 3 miles north of Los Banos, thence to San Luis ranch.

Signal: Quadripod with cross targets and flag.

Station mark: Iron bench-mark post centered under signal.

[Latitude 37° 09′ 49.248″. Longitude 120° 45′ 58.227″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Los Banos Tank	31 39 32.93	211 36 41.22	4.1269623	8.324
Milepost 162	66 52 18.43	246 48 53.96	3.9584686	5.647
Underwood	116 14 52.28	296 12 14.62	3.8563848	4.464
San Juan	313 21 03.91	133 25 01.88	4.1268982	8.322
Delta	334 56 43.03	154 57 41.65	3.7527904	3.517

HOLLINGSWORTH, FRESNO COUNTY, CALIF.

Center of tank over a well 1,000 feet deep on the Hollingsworth tract, 9 miles south of South Dos Palos. It is about 1 mile east of road leading south from South Dos Palos.

Signal: Center of tank.

Station mark: Center of cement foundation and floor under tank.

[Latitude 36° 52 50.104″. Longitude 120° 38′ 04.839″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Miller No. 2	13 10 56.85	193 10 32.62	3.6421701	2.726
Panoche	33 55 19.66	213 50 41.02	4.3155823	12.851
Ora Loma	89 55 55.72	269 53 18.76	3.8195797	4.101
White	101 17 06.20	281 09 40.43	4.2727986	11.645
Dos Palos	184 02 28.04	4 02 48.36	4.0744041	7.375
Golden Hoof	235 21 36.88	55 26 25.97	4.1605565	8.993
Silaxo Stack	257 24 12.73	77 28 11.58	4.0041040	6.273
Silaxo	271 41 21.47	91 45 08.58	3.9720590	5.827
Miller Headquarters	317 48 21.59	137 51 10.68	4.0173219	6.467
Miller No. 3	334 00 35.85	154 03 17.32	4.1833237	9.477

HOLLISTER, SAN BENITO COUNTY, CALIF.

Cupola on courthouse at Hollister, the county seat of San Benito County, Calif.
Station mark: Center of cupola.

[Latitude 36° 51′ 08.544″. Longitude 121° 24′ 12.466″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Santa Ana (1908)	248 49 22.53	68 55 31.44	4.2127407	10.141
Armstrong (1908)	343 20 25.50	163 23 38.15	4.4459584	17.350
Quien Sabe (1917)	279 20 12.24	99 26 51.55	4.2233829	10.393
Paicines (1917)	321 07 24.50	141 10 54.17	4.1408906	8.595

HONN, MERCED COUNTY, CALIF.

Tank house on Mr. Honn's ranch, about 12 miles south of Merced. Take Santa Rita road for 10 miles, thence go east 2 miles. It can be occupied.
Signal and station mark: Center of 40-foot tank house.

[Latitude 37° 08′ 28.870″. Longitude 120° 27′ 17.477″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rodgers	76 11 06.57	256 08 53.25	3.7897568	3.829
Eyrand	137 36 31.72	317 32 57.40	4.1128238	8.057
Merced	172 10 09.96	352 09 07.90	4.2681636	11.522
Lord	189 04 24.74	9 04 44.11	3.7004943	3.118
La Branza	251 53 50.54	71 58 40.69	4.0957696	7.747
Bliss	297 54 01.94	117 55 48.79	3.6941369	3.072

HURRICANE, MERCED COUNTY, CALIF.

About 12 miles by wagon road northeast of Merced. To reach it take road east from Merced to Tuttle, a station on the Atchison, Topeka & Santa Fe Ry. about 5 miles from Merced, thence go north to Mr. Applegate's ranch house, continue north 0.25 mile to fence corner, and thence northeast 2 miles to signal. Signal is on a very prominent hill that can be seen from Mr. Applegate's house. The old signal erected by C. L. Nelson was blown down, but the new signal is close to where the old one stood.
Signal: Tripod with cross targets.
Station mark: Iron bench-mark post centered under signal.

[Latitude 37° 21′ 19.214″. Longitude 120° 19′ 58.253″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Monument	31 06 50.86	211 05 12.59	3.8879045	4.800
Alfarata	47 03 04.64	226 59 15.20	4.1051387	7.916
Merced	68 04 59.67	247 59 31.11	4.1578254	8.937
Blacksmith	141 25 12.29	321 23 18.44	3.8689719	4.595
West Butte	230 36 39.87	50 40 18.46	4.0589318	7.117
Flat Top	295 07 08.26	115 15 13.87	4.3384349	13.545
Le Grand	319 50 36.40	139 53 55.14	4.0978411	7.784
Planada	353 30 53.67	173 31 14.12	3.8666605	4.571
La Branza	357 04 39.95	177 05 04.87	4.2990338	12.370

POLITECHNIKA GDAŃSKA ZAKŁAD GEOLOGII

INDIAN, FRESNO COUNTY, CALIF.

On a bald mountain at the head of Indian Valley and on the north side of Panoche Creek. It is about 7 miles northeast by east of Panoche post office. The Panoche-Mendota road intersects the road from Idria 4 miles south of the Kern oil well, from which the signal can be seen, probably 5 miles distant. Animals can be ridden up almost any of the ridges leading to highest point.

Signal: Cairn 7 feet high.

Station mark: Cairn 7 feet high.

Reference mark: Triangulation tablet set in rock; distance 1.60 meters from signal, azimuth 41° to signal.

[Latitude 36° 38′ 27.298″. Longitude 120° 43′ 34.341″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Buck (1908)	50 58 13.48	230 52 59.42	4.2270767	.....
Panoche (1908)	64 03 24.40	243 59 32.66	4.0309438	.....
Call (1908)	83 34 52.92	263 22 48.63	4.4823341	.....
Bonanza (1908)	128 57 25.73	308 48 18.34	4.4651214	.....
Miller No. 1 (1908)	175 34 45.82	355 33 56.50	4.4229378	.....
Miller No. 2 (1908)	197 47 18.15	17 50 11.11	4.3701193	.....
Miller Headquarters (1908)	218 44 00.83	38 50 06.50	4.3842510	.....
Miller No. 3 (1908)	229 02 20.90	49 08 18.84	4.2938858	.....
Mendota Oil (1908)	242 45 45.88	62 57 32.37	4.5180460	.....
Mendota (1908)	248 41 18.18	68 54 00.24	4.5309150	.....
Telephone (1908)	253 17 06.26	73 24 41.49	4.2957845	.....
Chaney (1908)	263 42 39.39	83 48 00.67	4.1287127	.....
Tanks (1908)	271 28 51.98	91 43 41.41	4.5687108	.....
Cantua (1908)	294 18 30.89	114 31 04.13	4.5379847	21.445
San Benito (1908)	346 12 58.83	166 15 54.86	4.4907897	.....
Panoche 2 (1916)	160 21 21.01	340 20 00.00	4.0004416	6.220
Tierra Loma (1916)	212 23 54.00	32 26 21.73	4.0588652	7.116

INGOMAR, MERCED COUNTY, CALIF.

A red water tank about 50 feet high in yard of section house at Ingomar, a station on the Southern Pacific R. R. on west side of San Joaquin Valley.

Signal and station mark: Center of tank.

[Latitude 37° 10′ 47.702″. Longitude 120° 58′ 04.631″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bareillas	20 14 31.54	200 11 57.82	4.2601790	11.312
Christian	97 39 17.07	277 34 42.96	4.0525214	7.012
Fairmont	234 40 33.03	54 43 56.54	4.0072640	6.318
Underwood	263 08 15.13	83 12 56.29	4.0627718	7.180

ITALIAN SERVICE COLONY, MADERA COUNTY, CALIF. (Not occupied.)

Station mark: Center of large water tank at the Italian Service Colony, about 4 miles southwest of Madera.

[Latitude 36° 55′ 55.31″. Longitude 120° 06′ 23.729″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Miller & Lux Signal	92 27 58.10	272 25 41.38	3.7509843	3.502
Crumley	150 28 18.92	330 26 08.42	4.0367511	6.762
Madera	232 34 34.25	52 36 13.01	3.7091331	3.180

JAMESAN, FRESNO COUNTY, CALIF.

Station is 0.5 mile north of Jamesan station on the Southern Pacific R. R., and is about 8 miles west of Kerman. The signal is 200 feet south of the Kerman-Mendota road and 100 feet west of road to Jamesan.

Signal: A tripod 18 feet high with cross targets.
Station mark: Iron bench-mark post centered under signal.

[Latitude 36° 44′ 03.380″. Longitude 120° 12′ 17.039″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Kings	19 34 15.20	199 33 27.31	3.7736912	3.690
Cantua	31 48 02.27	211 41 56.43	4.4617664	17.994
Tanks	40 09 07.99	220 05 19.05	4.1732567	9.260
Borland	60 48 51.34	240 44 25.56	4.1019662	7.858
Hermanhouse	97 21 10.56	277 17 11.43	4.0000079	6.214
Gallagher	224 10 29.16	44 13 42.21	4.0596341	7.128
Kerman	275 15 06.22	95 20 17.00	4.1122798	8.047
Sandy	324 19 16.87	144 22 09.42	4.0899247	7.643
Derrick	336 23 07.66	156 25 30.78	4.1722098	9.238

JOHNSON, MADERA COUNTY, CALIF.

On a levee about 2 miles east of the bridge across San Joaquin River and 8 miles northeast of Dos Palos. It is about 0.4 mile south of an east and west road leading to Chowchilla.

Signal: Timber structure with cross targets and flag.
Station mark: Iron bench-mark post centered under signal.

[Latitude 37° 03′ 51.386″. Longitude 120° 30′ 50.424″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Dos Palos	49 13 16.17	229 10 14.95	4.1165906	8.127
Bridge	72 37 18.02	252 36 03.07	3.5078316	2.001
Rodgers	174 06 17.46	354 05 59.58	3.8528015	4.427
El Nido	194 46 51.86	14 47 42.07	3.9059507	5.004
Bliss	236 59 30.05	57 03 25.13	4.0597503	7.130
Ash	262 43 16.03	82 48 09.25	4.0832402	7.526
Syphon	300 59 52.97	121 04 59.95	4.1674508	9.137
Golden Hoof	354 32 17.49	174 33 45.71	4.0871288	7.594

JOLON, MONTEREY COUNTY, CALIF.

A three-point station on steep hill 1 mile east of Jolon, in San Antonio Valley. Leave San Antonio Mission road at a point opposite Earle Brothers' ranch, about 3 miles southeast of Mission and 4 miles northwest of Jolon.

Station mark: A mission roof tile set in ground under small rock cairn. Instrument over mark.

[Latitude 35° 59′ 14.431″. Longitude 121° 11′ 55.417″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Santa Lucia	131 42 58.53	311 35 13.13	4.4228507	16.451
Pine Creek	168 30 18.46	348 29 16.88	4.1184733	8.162
Williams	282 23 51.69	102 30 49.89	4.2617385	11.352
Rocky Butte	340 28 15.18	160 33 09.81	4.5783184	23.533

JUHL, SAN LUIS OBISPO COUNTY, CALIF.

On a timbered peak at the source of Old Creek, about 7 or 8 miles from Cayucos. The York Hill road from Paso Robles to Cayucos crosses summit near the source of Old Creek. At this summit there is a gate on either side of road and a grove of Monterey cypress trees on west side. Enter gate on east side of road, go east to summit of first hill, thence south along ridge, but do not go through fence until summit of hill is reached, about 0.75 mile from the road. All timber was cut from summit.

Signal: A tree or stump with branches on it left standing.

Station mark: A triangulation tablet set in rock, placed in the ground. Position of tablet was computed. Azimuth from tablet to signal, 49° 04′; distance, 1.12 meters.

[Latitude 35° 30′ 19.973″. Longitude 120° 50′ 13.438″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Stone	78 56 15.06	258 52 18.86	4.0190373	6.492
Rocky Butte	131 30 28.44	311 22 43.70	4.4285017	16.667
Fair Oaks	194 23 53.67	14 25 24.86	4.2002766	9.854
Dresser	250 25 12.97	70 34 26.80	4.4058368	15.819

KEARNEY, FRESNO COUNTY, CALIF.

A very high tower in Kearney Park about 6 miles west of Fresno.

Signal and station mark: Center of tower.

[Latitude 36° 43′ 20.442″. Longitude 119° 55′ 05.626″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McMullin	33 18 59.53	213 17 06.59	3.9318111	5.311
Derrick	58 02 14.14	237 54 21.32	4.3653550	14.411
Dunkard	82 19 41.12	262 16 53.12	3.8473695	4.372
Kerman	90 37 19.87	270 32 13.88	4.1037913	7.891
Rugg	97 36 51.46	277 33 46.27	3.8894343	4.817
Biola	135 12 10.77	315 08 42.51	4.0878869	7.607
Deep Well	195 07 07.43	15 09 21.55	4.3523742	13.987
Fhimney	225 35 02.97	45 38 40.73	4.1169640	8.134
Cresno	262 00 21.89	82 04 54.17	4.0697740	7.297

KERMAN, FRESNO COUNTY, CALIF.

Station is center of water tank in town of Kerman on Southern Pacific R. R., on west side of San Joaquin Valley.

[Latitude 36° 43′ 24.610″. Longitude , 120° 03′ 37.364″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Derrick	29 15 07.64	209 12 20.41	4.1535698	8.850
Sandy	33 05 57.42	213 03 39.50	4.0212703	6.526
Kings	73 34 57.52	253 28 59.05	4.1910270	9.647
Jamesan	95 20 17.00	275 15 06.22	4.1122798	8.047
Gallagher	152 34 43.74	332 32 45.72	4.0258373	6.595
Biola	205 23 05.25	25 24 43.26	3.9763586	5.884
Rugg	259 51 07.07	79 53 07.90	3.7069745	3.165
Kearney	270 32 13.88	90 37 19.87	4.1037913	7.891
Dunkard	280 34 18.25	100 36 36.21	3.7653452	3.620
McMullin	312 12 08.25	132.15 21.07	4.0342234	6.723

KINGS, FRESNO COUNTY, CALIF.

On west end of south pier of a wooden bridge across Kings Slough, about 3 miles southwest of Jamesan.

Signal and station mark: A 2 by 6 inch timber with cross targets and flag.

Reference mark: Iron bench-mark post on the levee at southwest corner of bridge. Position of signal computed: Azimuth from bench mark to signal, 258° 27′; distance, 19.8 feet.

[Latitude 36° 41′ 01.843″. Longitude 120° 13′ 37.160″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tanks	52 43 59.33	232 40 58.36	3.9810611	5.949
Borland	86 22 30.47	266 18 52.71	3.9575854	5.636
Hermanhouse	130 55 02.44	310 51 51.34	4.0209628	6.521
Jamesan	199 33 27.31	19 34 15.20	3.7736912	3.690
Kerman	253 28 59.05	73 34 57.52	4.1910270	9.647
Sandy	295 36 57.51	115 40 37.79	4.0070398	6.315
Derrick	315 16 44.34	135 19 55.19	4.0528116	7.017
San Joaquin Tank	337 58 45.06	158 00 08.29	3.9658451	5.744

KINGSBURY, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: High black tank in the town of Kingsbury.

[Latitude 36° 30′ 53.750″. Longitude 119° 33′ 03.378″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Round	186 14 39.08	6 16 11.74	4.5309734	21.102
Campbell	210 01 47.80	30 06 26.65	4.3654139	14.413
Smith	247 50 54.45	67 58 15.35	4.2982711	12.349

LA BRANZA, MERCED COUNTY, CALIF.

A tank at La Branza, a station on the Southern Pacific R. R. 12 miles southeast of Merced. There are two large silos about 300 feet southeast of tank.

Station mark and signal: Center of tank with a green roof and a green railing around it.

[Latitude 37° 10′ 34.262″. Longitude 120° 19′ 17.111″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ash	25 06 12.32	205 04 07.55	4.0804456	7.478
Bliss	50 28 59.19	230 25 56.00	3.9871177	6.032
Honn	71 58 40.69	251 53 50.54	4.0957696	7.747
Lord	95 39 48.31	275 35 17.39	4.0457740	6.904
Merced	135 19 02.02	315 13 09.23	4.3099650	12.686
Hurricane	177 05 04.87	357 04 39.95	4.2990338	12.370
Le Grand	214 25 34.31	34 28 27.75	4.0967741	7.765
Le Grand School	226 16 09.34	46 18 40.42	3.9306819	5.297
Flat Top	240 25 24.07	60 33 03.79	4.3330243	13.377
Marguerite	277 05 38.60	97 10 59.06	4.1201998	8.195
Chowchilla	315 51 51.96	135 54 03.62	3.8880722	4.802

LAS PALMAS, FRESNO COUNTY, CALIF.

A tank on top of large tank house in Las Palmas, a town on Friant Branch of Southern Pacific R. R., 7 miles east of Fresno. The tank house stands back of Las Palmas Winery.

Signal: Center of tank.

Station mark: Center of concrete foundation for building.

[Latitude 36° 45′ 25.888″. Longitude 119° 41′ 53.001″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fresno	74 26 52.16	254 23 38.37	3.9212635	5.183
Clovis	179 30 38.21	359 30 32.87	3.8698088	4.604
Copper	193 30 48.63	13 32 42.05	4.3017111	12.447
Oak	213 11 14.28	33 17 04.21	4.4210865	16.384
Red Bank	230 10 34.34	50 14 05.92	4.0569118	7.084
Round	247 43 11.22	67 49 57.64	4.2595383	11.295
Granville	283 01 37.02	103 05 45.01	4.0235123	6.559
Sanger	292 56 21.46	113 01 26.82	4.1386317	8.550

LAST CHANCE, MADERA COUNTY, CALIF.

A windmill on the Last Chance ranch, about 2 miles southwest of Levine School and 10 miles southwest of Madera.

Signal: Windmill.

Station mark: Center of 8-inch well under mill.

[Latitude 36° 51′ 42.852″. Longitude 120° 09′ 17.009″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mill Tank	22 41 31.73	202 40 22.54	3.8702547	4.609
Aliso Mill	89 52 13.64	269 48 35.19	3.9552171	5.605
Southeast Cottonwood	134 31 19.05	314 27 47.962	4.0864039	7.581
Miller & Lux Signal	170 28 29.22	350 27 56.53	3.9107280	5.059
Madera	217 26 10.08	37 29 32.66	4.1376429	8.531
Eastin	267 45 57.19	87 51 11.42	4.1134044	8.068
Gallagher	329 15 38.28	149 17 03.68	3.8394367	4.293

LE GRAND, MERCED COUNTY, CALIF.

On a hill 200 feet east of a north and south road and 3 miles north of Le Grand, a station on the Atchison, Topeka & Santa Fe Ry. The property is owned by W. C. Dallas.

Signal: A quadripod.

Station mark: Iron bench-mark post centered under signal.

[Latitude 37° 16′ 08.524″. Longitude 120° 14′ 30.383″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chowchilla	6 06 28.96	186 05 47.42	4.2025688	9.906
Le Grand School	11 37 44.24	191 37 21.94	3.6538189	2.800
La Branza	34 28 27.75	214 25 34.31	4.0967741	7.765
Merced	101 09 47.63	281 01 00.76	4.3390540	13.565
Monument	103 50 07.34	283 45 10.56	4.0943978	7.722
Planada	107 24 33.27	287 21 35.11	3.8804168	4.718
Hurricane	139 53 55.14	319 50 36.40	4.0978411	7.784
Blacksmith	140 29 02.11	320 23 49.51	4.2993034	12.378
West Butte	182 41 05.26	2 41 24.74	4.2268546	10.476
Flat Top	268 28 51.22	88 33 37.80	4.0668279	7.247
Green	270 52 11.55	91 01 19.60	4.3483662	13.858
Red Tank	308 29 24.97	128 32 59.79	4.0486003	6.950
Marguerite	333 16 20.65	153 18 48.04	4.1261244	8.308

LE GRAND SCHOOL, MERCED COUNTY, CALIF.

Station mark and signal: Cupola on schoolhouse in the town of Le Grand on the Atchison, Topeka & Santa Fe Ry.

[Latitude 37° 13′ 45.346″. Longitude 120° 15′ 07.230″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
La Branza	46 18 40.42	226 16 09.34	3.9306819	5.297
Le Grand	191 37 21.94	11 37 44.24	3.6538189	2.800
Flat Top	249 23 50.78	69 28 59.53	4.1279427	8.342
Marguerite	317 23 45.09	137 26 34.69	4.0097013	6.354

LONE GUM, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: Center of large eucalyptus tree on flume line northeast of Clovis.

[Latitude 36° 51′ 25.736″. Longitude 119° 38′ 15.289″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Copper	175 10 43.91	355 10 26.76	3.9249409	5.227
Oak	219 31 07.71	39 34 47.31	4.1528344	8.835
Round	290 13 37.66	110 18 14.03	4.0854889	7.566
Red Bank	318 28 59.91	138 30 21.20	3.7049268	3.150

LONE PINE, SAN BENITO COUNTY, CALIF. (Not occupied.)

A prominent pine tree on brushy hill almost on line between Harris and Martin and about midway between them.

Station mark: Pine tree.

[Latitude 36° 31′ 17.024″. Longitude 121° 10′ 06.010″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chalone	16 20 35.64	196 19 38.67	3.9283823	5.269
Harris	126 12 14.29	306 10 21.70	3.7656121	3.622
Call	223 41 49.00	43 45 33.95	4.1330026	8.440
Martin	302 23 17.73	122 25 44.54	3.8618133	4.520

LORD, MERCED COUNTY, CALIF.

To reach station follow road due south from Merced for 8 miles to a T road thence east for 2 miles. The signal is on the fence line along county road and is 0.5 mile south of a small cabin and barn in Mr. Lord's pasture field.

Signal: Tripod with cross targets.

Station mark: Iron bench-mark post centered under signal.

[Latitude 37° 11′ 09.596″. Longitude 120° 26′ 45.397″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Honn	9 04 44.11	189 04 24.74	3.7004943	3.118
Eyrand	115 52 11.55	295 48 17.73	4.0250777	6.583
Merced	166 06 51.56	346 05 30.06	4.1404688	8.587
Alfarata	183 59 40.10	3 59 47.44	4.0057353	6.296
La Branza	275 35 17.39	95 39 48.31	4.0457740	6.904
Bliss	333 37 32.95	153 49 00.49	3.9085808	5.034

LOS BANOS TANK, MERCED COUNTY, CALIF.

The city water tank on the southeast side of the town of Los Banos.

Signal: Center of tank.

Station mark: Center of tank.

[Latitude 37° 03′ 39.278″. Longitude 120° 50′ 42.805″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bonanza	23 06 54.01	203 02 01.39	4.4878415	19.107
Pipeline	67 47 08.65	247 43 30.34	3.9856751	6.012
Bareillas	77 22 17.66	257 15 17.99	4.2466538	10.965
Christian	123 42 32.58	303 33 32.17	4.4239815	16.494
Milepost 162	170 20 18.55	350 19 45.97	3.9000410	4.936
Highland	211 36 41.22	31 39 32.93	4.1269623	8 324
Delta	236 18 16.64	56 22 06.81	4.0540401	7.037
San Juan	262 27 08.23	82 33 57.46	4.2282697	10.510
Power	273 07 19.41	93 11 53.77	4.0517582	7.000
White	358 39 22.92	178 39 32.25	4.2140071	10.171

LUCERNE, MERCED COUNTY, CALIF. (Not occupied.)

Station mark: Center of windmill at Miller & Lux Lucerne ranch, north of Dos Palos.

[Latitude 37° 05′ 14.366″. Longitude 120° 35′ 37.239″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Belmont	25 21 26.25	205 20 22.17	3.7878512	3.812
San Juan	82 37 44.66	262 35 27.97	3.7517153	3.508

LYNCH, SAN LUIS OBISPO COUNTY, CALIF.

On a brushy mountain, locally known as Lynch Mountain or Tierra Redondo. It is about 7 miles south of Pleyto post office, and there is a good road from that place to the Lynch ranch, at foot of mountain. Animals might be taken to summit, but it is probably better to walk up on the west side, keeping near the summit, but not on top until very near the signal. The top of the mountain is rather flat and covered with thick brush, but signal is on the highest point and near the cliff on the southwest end.

Signal: An oak tree set in the ground.

Station mark: A triangulation tablet set in solid rock 1.05 meters a little east of north of signal. Position of tablet was computed. This point is not the same as point called Lynch by L. F. Biggs. Azimuth from tablet to signal, 24° 00′; distance, 1.05 meters.

[Latitude 35° 46′ 16.765″. Longitude 120° 59′ 06.972″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rocky Butte	29 36 37.88	209 34 03.13	4.1301415	8.385
Red Rock	84 09 17.14	264 03 10.23	4.2001510	9.851
Graves	129 29 23.34	309 24 31.63	4.2096584	10.069
Williams	175 57 38.95	355 57 05.89	4.3027095	12.476
Vineyard	266 44 07.46	86 55 03.93	4.4509332	17.550
Hellman	267 44 39.13	87 52 15.54	4.2927839	12.194
Fair Oaks	309 05 42.01	129 12 24.90	4.3497869	13.904

M'MULLIN, FRESNO COUNTY, CALIF.

A white tank house at McMullin station 7 miles southeast of Kerman.

Signal: Center of tank.

Station mark: Center of concrete foundation.

[Latitude 36° 39′ 28.696″. Longitude 119° 58′ 14.644″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Derrick	71 02 55.60	250 56 55.93	4.1996952	9.841
Sandy	83 42 22.96	263 36 52.50	4.1409783	8.597
Kerman	132 15 21.07	312 12 08.25	4.0342234	6.723
Dunkard	159 47 28.68	339 46 33.74	3.8201001	4.106
Rugg	159 52 09.67	339 50 57.57	3.9394826	5.405
Kearney	213 17 06.59	33 18 59.53	3.9318111	5.311

MADERA, MADERA COUNTY, CALIF., FROM SOUTH.

Madera County courthouse at Madera, Calif.

Signal and station mark: Center of clock tower and dome. Center of cupola computed.

[Latitude 36° 57′ 36.362″ (from south), 36° 57′ 36.402″ (from north). Longitude 120° 03′ 39.663″ (from south), 120° 03′ 39.421″ (from north).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gallagher	16 00 35.41	195 58 38.45	4.2433982	10.883
Last Chance	37 29 32.66	217 26 10.08	4.1376429	8.531
Aliso Mill	57 53 22.54	237 46 21.25	4.3120667	12.747
Miller & Lux Signal	73 33 13.19	253 29 17.69	4.0047251	6.282
Miller & Lux Signal (north)	73 32 58.29	253 29 02.77	4.0047962	6.283
Adobe, north	245 06 23.10	65 13 35.53	4.2917831	12.166
Adobe	245 06 21.16	65 13 33.55	4.2917561	12.165
Service	266 20 00.20	86 25 03.20	4.0965713	7.761
Deep Well	283 59 37.46	104 07 08.92	4.2824698	11.907
Greenleaf	308 10 25.10	128 14 55.34	4.1514200	8.806
Herndon	315 58 51.57	136 04 07.65	4.2734974	11.664
Eastin	336 03 20.02	156 05 12.00	4.0561051	7.071
Biola	346 54 22.35	166 56 02.01	4.2594110	11.292

MADERA, MADERA COUNTY, CALIF., FROM NORTH.

[Latitude 36° 57′ 36.402″ (from north), 36° 57′ 36.362″ (from south. Longitude 120° 03′ 39.421″ (from north), 120° 03′ 39.663″ (from south).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Italian Service Colony	52 36 13.01	232 34 34.25	3.7091331	3.180
Miller & Lux Signal (south)	73 33 13.19	253 29 17.69	4.0047251	6.282
Miller & Lux Signal	73 32 58.29	253 29 02.77	4.0047962	6.283
Southeast Cottonwood	82 12 56.92	262 06 02.76	4.2357339	10.693
Fuller	105 56 02.64	285 49 32.04	4.2226242	10.375
Crumley	124 01 29.82	303 57 40.42	4.0558576	7.067
Berenda School	136 33 57.29	316 30 38.35	4.0749278	7.384
Sharon	158 14 42.44	338 12 10.96	4.2242262	10.413
Talbot	199 22 28.17	19 23 39.03	3.9431201	5.451
Adobe	245 06 23.10	65 13 35.53	4.2917831	12.166
Adobe (south)	245 06 21.16	65 13 33.55	4.2917561	12.165

MARGUERITE, MADERA COUNTY, CALIF.

Station is on south bank of Chowchilla River, half a mile south of Marguerite, a station on the Atchison, Topeka & Santa Fe Ry., 300 feet west of the railroad and just south of the railroad bridge over Chowchilla River.

Signal: Quadripod with cross targets.

Station mark: Iron bench-mark post centered under signal.

[Latitude 37° 09′ 41.096″. Longitude 120° 10′ 26.680″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chowchilla	63 08 28.61	243 05 19.97	3.9367548	5.372
La Branza	97 10 59.06	277 05 38.60	4.1201998	8.195
Le Grand School	137 26 34.69	317 23 45.09	4.0097013	6.354
Le Grand	153 18 48.04	333 16 20.65	4.1261244	8.308
Flat Top	204 47 10.49	24 49 29.32	4.1299824	8.382
Red Tank	208 51 57.08	28 53 04.35	3.7547222	3.532
Green	234 34 34.53	54 41 14.52	4.3009786	12.426
Rabbit	277 07 25.24	97 16 14.45	4.3384076	13.544
Daulton	280 45 23.21	100 52 19.07	4.2381142	10.751
Sharon	330 25 36.57	150 27 10.57	3.8916362	4.842

MARTIN, SAN BENITO COUNTY, CALIF.

On a low mountain, on which are scattered oaks, about 2 miles southwest of San Benito, probably on Mr. Martin's land but very near the Cornwall ranch. From San Benito take the King City road for about 1 mile, then turn to right up grade on road going to the Cornwall ranch. Just before reaching the Cornwall residence take left-hand road, passing an old barn, thence go west through gate and up rather steep hill.

On summit of hill leave road and go north up ridge. It is possible to drive within 0.25 mile of signal.

Signal: A large oak on summit was trimmed and stump about 15 feet high was left for signal. Other high trees were cut.

Station mark: A tablet with a cross on it, set in rock placed in ground. This rock had been marked by E. P. Davis and was moved about 15 feet nearer the oak tree and reset. Position of mark computed. Azimuth from tablet to signal, 181° 47′; distance, 1.87 meters.

[Latitude 36° 29′ 10.534″. Longitude 121° 05′ 59.218″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chalone	63 36 18.71	243 32 55.08	3.9788655	5.919
Lone Pine	122 25 44.54	302 23 17.73	3.8618133	4.520
Harris	124 07 37.33	304 03 17.92	4.1171623	8.138
Call	193 20 01.54	13 21 19.43	4.1490672	8.758

MECO, SAN BENITO COUNTY, CALIF.

On a rather high peak, locally known as Meco Peak, 18 or 19 miles a little south of east from Tres Pinos. From Tres Pinos take the road going east to the Ingart ranch, thence by the Buena Vista ranch, thence to the Los Martin ranch. The peak is about 2 miles east of Los Martin ranch, and there is a trail from the ranch to the summit, which is on a school section just east of the ranch line. Top of peak is bald and has two or three large rocks on southeast side. There are several large oak trees on north side of peak.

Signal: An oak tree set 3 feet in the ground.

Station mark: A tablet cemented in rock. Position of tablet computed. Azimuth from tablet to signal, 74° 10′; distance, 1.80 meters.

[Latitude 36° 45′ 10.078″. Longitude 121° 03′ 25.835″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Call	2 01 34.25	182 01 20.75	4.2006530	9.863
Harris	33 24 13.23	213 18 21.43	4.4252340	16.542
Elkhorn	48 58 49.34	228 55 45.05	4.0060857	6.301
Armstrong	55 41 53.53	235 32 41.24	4.4442413	17.282
Quien Sabe	120 04 24.92	299 58 37.17	4.2208393	10.332
Peak	137 31 03.27	317 28 13.52	4.0171081	6.463
Bonanza	229 12 26.10	49 15 11.38	3.9561009	5.616

MERCED, MERCED COUNTY, CALIF.

Station is Merced County courthouse at Merced.

Signal and station mark: Center of cupola.

[Latitude 37° 18′ 24.733″. Longitude 120° 29′ 00.061″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Eyrand	35 14 20.54	215 11 47.93	4.0321314	6.691
Blacksmith	217 58 17.90	38 01 52.87	4.1511041	8.799
Hurricane	247 59 31.11	68 04 59.67	4.1578254	8.937
Monument	277 29 44.07	97 33 34.19	3.9746697	5.862
Le Grand	281 01 00.76	101 09 47.63	4.3390540	13.565
Alfarata	309 24 02.88	129 25 41.83	3.7165755	3.235
La Branza	315 13 09.23	135 19 02.02	4.3099650	12.686
Lord	346 05 30.06	166 06 51.56	4.1404688	8.587
Honn	352 09 07.90	172 10 09.96	4.2681636	11.522

MILL, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: Center of windmill at farmhouse 2 miles northwest of Round triangulation station.

[Latitude 36° 51′ 08.853″. Longitude 119° 31′ 21.038″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Red Mountain	263 45 37.99	83 50 04.54	4.0442681	6.880
Campbell	332 26 27.92	152 30 06.56	4.2922609	12.179
Round	342 36 39.58	162 37 07.54	3.5881341	2.407

MILLER NO. 2, FRESNO COUNTY, CALIF.

Center of windmill derrick at the Miller & Lux Co.'s sheep ranch, about 0.75 mile southeast of the Sullivan ranch (which is also owned by the Miller & Lux Co.). It is about 8 or 9 miles south of South Dos Palos, a station on the Southern Pacific R. R., on the west side of San Joaquin River. There is a barn and a very small cabin near windmill.

Station mark: The pipe extending into ground.

[Latitude 36° 50′ 31.536″. Longitude 120° 38′ 45.218″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tierra Loma	4 41 24.67	184 40 59.61	4.1038132	7.892
Indian (1908)	17 50 11.11	197 47 18.15	4.3701193	14.570
Shell No. 1	25 17 16.80	205 15 50.50	3.9223302	5.196
Panoche	39 16 07.52	219 11 53.19	4.2214507	10.347
Bonanza (1908)	82 27 21.95	262 15 19.98	4.4788602	18.716
White (1908)	114 32 43.23	294 25 41.90	4.2811679	11.872
Bareillas (1908)	120 21 51.29	300 07 41.49	4.6076025	.....
Ora Loma	127 16 39.63	307 14 23.97	3.8474774	4.373
Oil Stack (1908)	162 11 06.98	342 08 57.84	4.2400084	.....
South Dos Palos (1908)	176 37 48.17	356 37 28.81	4.1324830	.....
Hollingsworth	193 10 32.62	13 10 56.85	3.6421701	2.726
Golden Hoof	225 55 03.54	46 00 16.75	4.2544780	11.164
Silaxo	248 55 49.57	69 00 00.82	4.0459480	6.907
Miller Headquarters (1908)	293 16 45.16	113 19 58.39	3.9394580	5.405
Barney (1908)	305 32 29.89	125 36 48.94	4.1198395	.....
Miller No. 3 (1908)	320 50 31.92	140 53 37.51	4.0853095	7.562
Gruber	351 07 50.56	171 08 23.60	3.9480559	5.513
San Benito (1908)	359 48 55.54	179 48 59.58	4.7192690	32.555

MILLER NO. 3, FRESNO COUNTY, CALIF.

The windmill derrick at the Miller & Lux Co.'s sheep camp, known as the Whistler ranch, 3.5 or 4 miles south of the Headquarters sheep ranch, which is about 8 or 9 miles southwest of Firebaugh and about 10 or 11 miles west of Mendota, towns on the Southern Pacific R. R. A barn and two small white cabins are near the windmill, but there are no trees.

Station mark: The pipe extending into ground.

[Latitude 36° 45′ 25.275″. Longitude 120° 33′ 35.388″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
San Benito (1908)	9 58 33.22	189 55 32.69	4.6395952	.....
Indian (1908)	49 08 18.84	229 02 20.90	4.2938858	12.225
Tierra Loma	69 47 18.14	249 43 47.76	3.9684437	5.778
Panoche	79 19 10.54	259 11 51.12	4.2683266	11.526
Gruber	96 06 39.79	276 04 07.38	3.8029572	3.947
Bonanza (1908)	98 21 35.12	278 06 28.35	4.5791323	.....
Miller No. 2 (1908)	140 53 37.51	320 50 31.92	4.0853095	7.562
Hollingsworth	154 03 17.32	334 00 35.85	4.1833237	9.477
Miller Headquarters (1908)	182 57 57.42	2 58 04.93	3.7786616	3.733
Silaxo	191 21 55.80	11 23 01.13	4.1367072	8.513
Firebaugh	218 36 06.91	38 39 47.79	4.1654803	9.096
Barney (1908)	239 43 19.21	59 44 32.56	3.5464257	.....
Helm	254 19 42.12	74 26 16.42	4.2293593	10.537
Mendota Oil (1908)	261 28 56.92	81 34 45.86	4.1648756	.....
Telephone (1908)	330 40 42.19	150 42 19.89	3.9181290	5.146

MILLER HEADQUARTERS, FRESNO COUNTY, CALIF.

The windmill derrick at the Miller & Lux Co.'s Headquarters sheep ranch. It is about 7 miles south of the superintendent's ranch, which is about halfway between South Dos Palos and Firebaugh, stations west of San Joaquin River on the Southern Pacific R. R.

Station mark: The iron pipe extending into ground.

[Latitude 36° 48′ 39.888″. Longitude 120° 33′ 22.848″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Miller No. 3 (1908)	2 58 04.93	182 57 57.42	3.7786616	3.733
Indian (1908)	38 50 06.50	218 44 00.83	4.3842510	15.052
Bonanza (1908)	89 16 18.47	269 01 03.61	4.5781093	23.521
Miller No. 2 (1908)	113 19 58.39	293 16 45.16	3.9394580	5.405
Barney (1908)	327 08 56.09	147 10 01.97	3.7014854	.....
Panoche (1916)	63 01 29.01	242 54 01.81	4.3181120	12.926
Ora Loma	119 35 24.12	299 29 55.19	4.1937161	9.707
Hollingsworth	137 51 10.68	317 48 21.59	4.0173219	6.467
Golden Hoof	197 11 45.99	17 13 45.61	4.2221530	10.363
Silaxo	197 49 17.60	17 50 15.45	3.8924525	4.851
Firebaugh	238 20 22.21	58 23 55.72	4.0155529	6.440
Helm	275 03 46.83	95 10 13.86	4.2062559	9.991

MILEPOST 162, MERCED COUNTY, CALIF.

On bank of a canal, 5½ miles northwest of Los Banos, 2½ miles northwest of a Standard Oil Co.'s pumping station, and 20 feet north of milepost 162. It can be reached by taking the north and south road from Los Banos to the Standard Oil Co.'s pumping station, thence going northwesterly along canal to station.

Signal and station mark: A 6 by 6 inch pole bearing cross targets.

Reference mark: Iron bench-mark post set on northwest side of pole.

Position of signal computed.

Azimuth from bench mark to signal, 139° 15′; distance, 4.1 feet.

[Latitude 37° 07′ 53.317″. Longitude 121° 51′ 36.818″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bareillas	53 38 41.10	233 32 13.65	4.2949810	12.255
Romero	89 33 29.43	269 27 52.77	4.1388420	8.554
Christian	108 23 12.41	288 14 43.19	4.3397688	13.587
Fairmont	173 35 38.69	353 35 07.72	4.0539241	7.035
Underwood	195 46 53.21	15 47 39.92	3.8459179	4.358
Highland	246 48 53.96	66 52 18.43	3.9584686	5.647
Delta	278 11 00.31	98 15 23.27	4.0360915	6.752
Los Banos Tank	350 19 45.97	170 20 18.55	3.9000410	4.936

MILLER & LUX SIGNAL FROM SOUTH, MADERA COUNTY, CALIF.

In a Miller & Lux pasture field, 7 miles a little south of west of Madera, on the Firebaugh road. The signal is 0.5 mile north of road and 0.5 mile south of a red tank and can easily be seen from road.

Signal: Quadripod with cross targets.

Station mark: Iron bench-mark post centered under signal.

[Latitude 36° 56′ 03.334″ (south), 36° 56′ 03.338″ (north). Longitude 120° 10′ 11.453″ (south), 120° 10′ 11.267″ (north).

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Aliso Mill	43 36 59.63	223 33 53.69	4.0461435	6.910
Southeast Cottonwood (north)	94 04 40.04	274 01 41.48	3.8675666	4.581
Southeast Cottonwood	94 04 48.78	274 01 50.24	3.8675076	4.580
Madera (north)	253 29 02.77	72 32 58.29	4.0047962	6.283
Madera	253 29 17.69	73 33 13.19	4.0047251	6.282
Last Chance	350 27 56.53	170 28 29.22	3.9107280	5.059

MILLER & LUX SIGNAL FROM NORTH, MADERA COUNTY, CALIF.

[Latitude 36° 56′ 03.338″ (north), 36° 56′ 03.334″ (south). Longitude 120° 10′ 11.267″ (north), 120° 10′ 11.453″ (south).

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Southeast Cottonwood (south)	94 04 48.78	274 01 50.24	3.8675076	4.580
Southeast Cottonwood	94 04 40.04	274 01 41.48	3.8675666	4.581
Crumley	181 37 15.43	1 37 21.78	3.9652420	5.736
Madera	253 29 02.77	73 32 58.29	4.0047962	6.283
Madera (south)	253 29 17.69	73 33 13.19	4.0047251	6.282
Italian Service Colony	272 25 41.38	92 27 58.10	3.7509843	3.502

MILL TANK, MADERA COUNTY, CALIF. (Not occupied.)

Station mark: Windmill on tank house 6 or 8 miles northwest of Kermon.

[Latitude 36° 48′ 00.837″. Longitude 120° 11′ 12.436″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Aliso Mill	137 54 34.75	317 52 05.66	3.9633800	5.711
Last Chance	202 40 22.54	22 41 31.73	3.8702547	4.609
Gallagher	261 55 34.88	81 58 09.38	3.8100167	4.012

NORTH FRESNO CHIMNEY, FRESNO COUNTY, CALIF. (Not occupied.)

Water standpipe for North Fresno, about 5 miles north of Fresno courthouse.

[Latitude 36° 48′ 17.531″. Longitude 119° 48′ 48.414″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Kearney	45 38 40.73	225 35 02.97	4.1169640	8.134
Copper	226 30 01.10	46 36 03.82	4.3144082	12.816
Fresno	343 13 24.90	163 14 19.68	3.8957436	4.888

OAK, FRESNO COUNTY, CALIF.

Station is a 14-inch oak tree on a high hill 6 miles north of academy. To reach it take the road running north and east from academy, keeping all left-hand roads for 6 miles to where the road passes under a lumber flume. Continue 200 feet to a stream crossing thence to left up second-class road around south base of hill. Follow this road 1 mile, more or less, to foot of hill. Animals can be ridden to top.

Signal and station mark: 14-inch oak tree.

Reference mark: A bronze tablet set in rock 35 feet north and 0.5 foot east of signal. Position of signal computed.

[Latitude 36° 57′ 21.371″. Longitude 119° 32′ 09.601″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Red Bank	21 07 48.07	201 05 29.94	4.1992206	9.830
Las Palmas	33 17 04.21	213 11 14.28	4.4210865	16.385
Lone Gum	39 34 47.31	219 31 07.71	4.1528344	8.835
Fresno	42 51 06.41	222 42 02.32	4.5198238	20.567
Copper	75 13 15.78	255 09 18.82	4.0039318	6.270

ORA LOMA, FRESNO COUNTY, CALIF.

Station is a steel tank 110 feet high 9 miles southwest of Dos Palos.

Signal and station mark: Center of tank.

[Latitude 36° 52′ 49.771″. Longitude 120° 42′ 31.368″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Panoche	16 01 28.47	195 59 29.49	4.2516671	11.092
White	107 17 06.15	287 12 20.40	4.0912602	7.667
Dos Palos	212 04 27.23	32 07 27.71	4.1457490	8.692
Golden Hoof	245 58 15.37	66 05 44.56	4.3065781	12.587
Hollingsworth	269 53 18.76	89 55 58.72	3.8195797	4.101
Miller Headquarters	299 29 55.19	119 35 24.12	4.1937161	9.707
Miller No. 2	307 14 23.97	127 16 39.63	3.8474774	4.373

ORANGE COVE, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: Center of tank.

[Latitude 36° 37′ 23.138″. Longitude 119° 18′ 38.728.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Smith	34 17 35.31	214 16 21.22	3.7389986	3.407
Campbell	129 19 56.83	309 15 59.79	4.1052375	7.917
Sampson	228 56 13.40	49 03 42.86	4.3934012	15.373
Stokes	318 58 27.37	139 02 30.03	4.1886054	9.593

OROSI, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: Center of black steel tank.

[Latitude 36° 32′ 56.977″. Longitude 119° 15′ 35.077″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Smith	115 40 01.30	295 36 57.87	3.9290562	5.277
Campbell	138 29 30.91	318 23 44.52	4.3374712	13.515
Bear Hill	174 39 44.62	354 38 55.52	4.3411858	13.631
Stokes	301 45 58.30	121 48 11.42	3.8158841	4.067

PAICINES, SAN BENITO COUNTY, CALIF.

On a bald ridge about 3 miles south of Tres Pinos. The ridge is between San Benito River and Tres Pinos Creek on land owned by a Mr. Balboa or Brown. He is a Portuguese and is known by both names. From Tres Pinos take the Paicines road until opposite Mr. Balboa's residence, then go to right up hill on farm road for 0.25 mile, thence on horseback to summit of hill.

Signal: An oak tree set 3.5 feet in the ground.

Station mark: A triangulation tablet set in a rock placed in ground. Position of tablet was computed. Azimuth from tablet to signal, 58° 33′; distance, 1.38 meters.

[Latitude 36° 45′ 19.066″. Longitude 121° 18′ 22.469″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Armstrong	2 28 56.92	182 28 40.26	4.2040293	9.940
Fremont	90 51 55.13	270 44 50.36	4.2457265	10.942
Hollister	141 10 54.17	321 07 24.50	4.1408906	8.595
Quien Sabe	224 13 10.06	44 15 19.31	4.0503057	6.977
Peak	244 01 19.58	64 07 26.79	4.2280110	10.504
Elkhorn	295 21 36.26	115 27 28.12	4.2085915	10.045

PANOCHE MOUNTAIN, FRESNO COUNTY, CALIF.

A lumber tripod on bald hill, about 20 miles west of Mendota. It is about the highest point between the stations Indian and White and on line between them.

Station mark: Iron bench-mark post under center of station.

[Latitude 36° 43′ 33.120″. Longitude 120° 45′ 49.954″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
White	161 44 58.70	341 42 12.49	4.3408881	13.622
Ora Loma	195 59 29.49	16 01 28.47	4.2516671	11.092
Hollingsworth	213 50 41.02	33 55 19.66	4.3155823	12.851
Miller No. 2	219 11 53.19	39 16 07.52	4.2214507	10.347
Silaxo	231 00 26.69	51 08 52.04	4.4294245	16.702
Shell No. 1	232 30 56.09	52 33 44.04	3.9431269	5.451
Miller Headquarters	242 54 01.81	63 01 29.01	4.3181120	12.926
Gruber	250 49 26.18	70 54 13.27	4.1004317	7.830
Miller No. 3	259 11 51.12	79 19 10.54	4.2683266	11.526
Tierra Loma	268 31 17.18	88 35 06.15	3.9779082	5.906
Telephone	279 30 47.63	99 39 44.38	4.3541563	14.045
Indian	340 20 00.00	160 21 21.01	4.0004416	6.220

PARLIER, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: Center of high, white wooden tank in Parlier.

[Latitude 36° 36′ 37.278″. Longitude 119° 31′ 41.655″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Campbell	225 16 02.53	45 19 52.90	4.1298555	8.379
Smith	280 43 08.05	100 49 40.73	4.2218216	10.356
Reedley	282 19 37.28	102 22 21.16	3.8446330	4.345

PEAK, SAN BENITO COUNTY, CALIF. (Not occupied.)

Highest point of sharp peak about 5 miles east of Quien Sabe Peak.

[Latitude 36° 49′ 18.844″. Longitude 121° 08′ 09.288″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Elkhorn	2 27 21.83	182 27 07.02	4.1565683	8.911
Palcines	64 07 26.79	244 01 19.58	4.2280110	10.504
Quien Sabe	95 05 02.68	275 02 04.55	3.8688911	4.595
Meco	317 28 13.52	137 31 03.27	4.0171081	6.463

PINE CREEK, MONTEREY COUNTY, CALIF. (Not occupied.)

On a brushy hill about 8 miles southwest of King City, a town on Southern Pacific R. R. Coast Line. Old road and trail to San Antonio Valley passes near signal.

[Latitude 36° 06′ 12.077″. Longitude 121° 13′ 40.072″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Santa Lucia	105 27 13.69	285 20 29.35	4.2501683	11.054
Bishoff	194 27 02.84	14 28 01.55	3.9985104	6.192
Eade	239 42 49.12	59 51 58.55	4.4302126	16.733
Williams	309 21 44.89	129 29 45.23	4.4227866	16.449
Jolon	348 29 16.88	168 30 18.46	4.1184733	8.162

PIPE LINE, MERCED COUNTY, CALIF.

On the oil pipe line, 6 miles southwest of Los Banos and 5 miles east of Bareillas triangulation station. The station is on the highest point of the pipe line and is about 400 feet due west of a fence corner.

Signal: Lumber tripod.

Station mark: A rock about 1 foot in diameter buried at foot of signal.

[Latitude 37° 01′ 40.460″. Longitude 120° 56′ 45.203″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bareillas	88 33 11.41	268 29 50.13	3.9172138	5.135
Los Banos Tank	247 43 30.34	67 47 08.65	3.9856751	6.012
Power	261 22 16.02	81 30 28.56	4.3103626	12.697
White	323 36 59.72	143 40 46.98	4.1978358	9.799

PLANADA, MERCED COUNTY, CALIF. (Not occupied.)

Station mark: Center of a high water tank at Planada, a small town on the Atchison, Topeka & Santa Fe R. R. about 10 miles east of Merced.

[Latitude 37° 17′ 22.116″. Longitude 120° 19′ 24.522″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Monument	98 12 41.59	278 10 42.96	3.6877652	3.028
Hurricane	173 31 14.12	353 30 53.67	3.8666605	4.571
West Butte	208 49 36.32	28 52 54.28	4.2211092	10.339
Le Grand	287 21 35.11	107 24 33.27	3.8804168	4.718

POWELL, MONTEREY COUNTY, CALIF.

On the highest part of a round brushy peak on north side of Powell Canyon and not very far from its head. The peak is about 2 miles from Mr. Powell's residence, which can be reached by road from Bradley or San Ardo, the best route being from Bradley. Animals can be ridden to summit of peak. Distance from Bradley to signal is about 14 miles. All brush was cut from the summit except one cluster.

Signal: A cluster of brush 8 or 9 feet high.

Station mark: A bench-mark tablet set in rock. Position of tablet was computed. Azimuth from tablet to signal, 89° 47′; distance, 1.60 meters.

[Latitude 36° 00′ 08.165″. Longitude 120° 43′ 01.025″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hellman	10 35 39.07	190 33 50.48	4.4031826	15.723
Semas	37 08 35.71	217 04 50.29	4.2028012	9.912
Williams	77 45 28.32	257 35 27.71	4.4186037	16.291
Stone Canyon	260 12 53.80	80 18 40.66	4.1757593	9.313
Stockdale	277 31 04.14	97 35 52.05	4.0926416	7.691
Castle Mountain	281 29 56.41	101 43 14.13	4.5408143	21.586
Vineyard	350 41 58.26	170 43 30.24	4.3870387	15.149

POWER, MERCED COUNTY, CALIF.

A power pole on the north edge of the highway, 8 miles east of Los Banos. The pole has wire braces and stands on the south bank of the slough; it is the first pole west of four willow trees in the road.

Signal and station mark: A power pole 1 foot in diameter with cross targets.

Reference mark: Iron bench-mark post 3.2 feet north of center of pole.

Position of signal computed. Azimuth from tablet to signal, 6° 49′; distance, 3.2 feet.

[Latitude 37° 03′ 19.132″. Longitude 120° 43′ 07.531″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
White	34 40 31.53	214 36 06.97	4.2818150	11.890
Pipe Line	81 30 28.56	261 22 16.02	4.3103626	12.697
Los Banos Tank	93 11 53.77	273 07 19.41	4.0517582	7.000
Delta	165 14 30.62	345 13 46.24	3.8533472	4.433
San Juan	242 53 10.08	62 55 24.86	3.7927464	3.856
Belmont	283 09 48.67	103 13 15.90	3.9410284	5.425

QUIEN SABE, SAN BENITO COUNTY, CALIF.

On a sharp peak, locally known as the Quien Sabe Peak, about 7 miles by road east-northeast of Tres Pinos. From Tres Pinos take the road going east to Buena Vista, but turn to left just before crossing bridge at schoolhouse. This road goes up a long grade and crosses ridge and thence to Quien Sabe Valley. On summit of this ridge leave road and go through gate, thence northeast on horseback to summit of peak.

Signal: An oak tree set in the ground with a small pile of rock around its base.

Station mark: A triangulation tablet set in solid rock under center of signal.

[Latitude 36° 49′ 39.997″. Longitude 121° 13′ 06.487″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Harris	0 24 12.06	180 24 06.89	4.4851199	18.988
Armstrong	19 34 59.63	199 31 34.03	4.4064630	15.842
Paicines	44 16 19.31	224 13 10.06	4.0503057	6.977
Fremont	73 02 39.82	252 52 25.44	4.4248932	16.529
Hollister	99 26 51.55	279 20 12.24	4.2233829	10.393
Peak	275 02 04.55	95 05 02.68	3.8688911	4.595
Meco	299 58 37.17	120 04 24.92	4.2208393	10.332
Elkhorn	335 41 46.65	155 44 29.70	4.2157235	10.211

RABBIT, MADERA COUNTY, CALIF.

On a bald hill about 5 miles from Raymond. The road from Raymond to Berenda passes within 0.5 mile of station at point where there is a water trough near gate. Go through gate and up the hill.

Signal and station mark: Cairn 7 feet high; triangulation tablet under center.

[Latitude 37° 08′ 12.98″ (1908), 37° 08′ 12.509″ (1915). Longitude 119° 55′ 49.51″ (1908), 119° 55′ 50.351″ (1915).)]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Monument (1908)	18 21 24.36	198 20 39.44	3.7662806	.....
Talbot	37 27 59.14	217 24 27.28	4.1545450	8.869
Sharon	77 14 43.27	257 07 28.40	4.2611284	11.336
Daulton	83 39 53.11	263 37 59.82	3.6684214	2.896
Marguerite	97 16 14.45	277 07 25.24	4.3384076	13.544
Flat Top	133 14 57.74	313 08 26.65	4.3400157	13.595
Green (1908)	159 41 07.65	339 38 57.68	4.1834615	9.480
Deadwood (1908)	227 53 40.55	48 02 34.90	4.4671127	.....
Quartz (1908)	254 25 42.01	74 34 34.80	4.3537500	.....
Adobe (1908)	331 33 22.24	151 35 52.69	4.1121673	8.045

RED BANK, FRESNO COUNTY, CALIF.

Station is windmill at the Red Bank School, 7 miles east of Clovis.

Signal: Center of steel windmill tower.

Station mark: Pipe in well under center of tower.

[Latitude 36° 49′ 22.593″. Longitude 119° 35′ 59.716″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Las Palmas	50 14 05.92	230 10 34.34	4.0569118	7.084
Lone Gum	138 30 21.20	318 28 59.91	3.7049268	3.150
Copper	161 33 20.54	341 31 42.04	4.1085492	7.978
Oak	201 05 29.94	21 07 48.07	4.1992206	9.830
Round	272 57 47.37	93 01 02.37	3.9071625	5.018
Sanger	342 52 24.06	162 53 58.19	4.1224134	8.237

RED MOUNTAIN, FRESNO COUNTY, CALIF.

On the north end of a long base ridge 15 miles northeast of Sanger. Follow Trimmer road from Sanger 15 miles to the mouth of Hugh's creek, thence go up Hugh's creek 2½ miles to a mine, thence west up a ridge just north of the mine to the summit, and thence north to signal, which is about 2 miles from the mine. Animals can be ridden to the top.

Signal: Cairn surrounding tree with white cloth. There is a large oak tree 100 feet north and a little east of cairn.

Station mark: Chisel mark under cairn.

Reference mark: Bronze tablet 6.2 feet north of center of cairn. Position of tree computed.

[Latitude 36° 51′ 47.673″. Longitude 119° 23′ 56.663″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Campbell	6 01 57.10	186 01 09.75	4.2713925	11.608
Sanger	39 20 38.57	219 14 59.77	4.3453730	13.763
Round	63 37 20.49	243 33 22.06	4.0414461	6.836
Mill	83 50 04.54	263 45 37.99	4.0442681	6.880
Copper	109 24 26.58	289 15 33.91	4.3669627	14.465
Sampson	201 21 12.27	111 31 53.52	4.4547651	17.706
Bear Hill	321 20 38.75	141 24 49.96	4.2215142	10.348
Tivey	358 31 06.83	178 31 15.14	4.1244156	8.275

RED ROCK, SAN LUIS OBISPO COUNTY, CALIF. (Not occupied.)

Summit of very sharp, rocky peak.

[Latitude 35° 45′ 23.920″. Longitude 121° 09′ 34.769″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Santa Lucia	151 41 38.66	331 32 31.97	4.6910257	30.505
Williams	213 27 31.69	33 33 06.35	4.4145015	16.138
Lynch	264 03 10.23	84 09 17.14	4.2001510	9.851
Rocky Butte	317 54 48.42	137 58 20.14	4.1338783	8.457

RED TANK, MERCED COUNTY, CALIF. (Not occupied.)

A water tank painted red at ranch about 6 miles east-southeast of Le Grand, a small town on the Atchison, Topeka & Santa Fe Ry.

Station mark: Center of tank.

[Latitude 37° 12′ 22.580″. Longitude 120° 08′ 35.385″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Marguerite	28 53 04.35	208 51 57.08	3.7547222	3.532
Le Grand	128 32 59.79	308 29 24.97	4.0486003	6.950
Flat Top	201 50 37.68	21 51 49.23	3.8937089	4.865
Green	244 00 30.31	64 06 03.16	4.1783613	9.369

REEDLEY, FRESNO COUNTY, CALIF.

Municipal steel water tank at Reedley.

Signal and station mark: Center of tank.

[Latitude 36° 35′ 48.759″. Longitude 119° 27′ 06.820″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Parlier	102 22 21.16	282 19 37.28	3.8446330	4.345
Sanger	143 06 43.08	323 02 58.85	4.1912142	9.651
Campbell	194 05 40.67	14 06 46.96	4.0539363	7.035
Smith	279 36 09.33	99 39 58.12	3.9857795	6.014

ROCKY BUTTE, SAN LUIS OBISPO COUNTY, CALIF.

A station of the U. S. Coast and Geodetic Survey.

On top of Rocky Butte in Santa Lucia Mountains, 14 miles from Cambria, 1.5 miles west of Newton Mather's house, 6 miles from house of J. P. Coffee. It may be reached by road along North Fork of San Simeon Creek. On east side of peak and 400 feet from summit is a good spring.

Station mark: A copper tack leaded in top of a stone 1 foot long and 8 inches square on top, 2 feet below surface, over which was built a concrete pier.

Reference marks: Four stones of same size as above with leaded bolts and copper tacks were placed, north, 47.12 inches; south, 44.38 inches; east, 31.25 inches; and west, 41.81 inches. The pier for observing latitude is 5.13 feet due west of station. Vertical circle wooden pier is N. 56.28 ft.

[Latitude 35° 39′ 56.026″. Longitude 121° 03′ 32.063″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Santa Lucia (CGS)	148 46 28.32	328 33 49.52	4.7951624	.....
Hepsedam (CGS)	196 18 58.11	16 27 15.09	4.8756197	.....
Red Rock (U)	137 58 20.14	317 54 48.42	4.1338783	8.457
Jolon (U)	160 33 09.81	340 28 15.18	4.5783184	23.533
Graves (U)	165 07 02.18	345 04 45.77	4.3578927	14.166
Williams (U)	189 20 56.31	9 22 58.39	4.5077331	20.002
Lynch (U)	209 34 03.13	29 36 37.88	4.1301415	8.385
Semas (U)	220 44 28.41	40 52 43.59	4.5125744	20.227
Castle Mount (U)	244 45 05.68	65 10 20.33	4.8558353	44.585
Vineyard (U)	249 01 10.69	69 14 41.10	4.5720691	23.196
Fair Oaks (U)	275 36 35.73	95 45 52.62	4.3829363	15.007
Dresser (U)	281 43 00.18	102 00 00.26	4.6535228	27.982
Juhl (U)	311 22 43.70	131 30 28.44	4.4285017	16.667
Stone (U)	333 26 24.10	153 30 12.07	4.3441912	13.726

CGS=U. S. Coast & Geodetic Survey in 1884-85. U=C. F. Urguhart in 1917.

RODGERS, MERCED COUNTY, CALIF.

About 15 miles south of Merced and 1½ miles west and 0.5 mile south of El Nido School. It is on an east and west fence line and is 0.5 mile east of the house of Mr. A. A. Rodgers.

Signal: Timber structure with cross targets and a flag.

Station mark: Iron bench mark centered under signal.

[Latitude 37° 07′ 41.301″. Longitude 120° 31′ 20.071″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bridge	16 12 40.91	196 11 43.79	3.9233892	5.209
Eyrand	165 56 52.64	345 55 31.82	4.0564102	7.076
El Nido	255 54 56.92	75 56 05.06	3.4582780	1.785
Honn	256 08 53.25	76 11 06.57	3.7897568	3.829
Bliss	274 36 49.01	94 41 02.16	4.0165461	6.455
Ash	293 32 03.76	113 37 15.08	4.1431363	8.639
Johnson	354 05 59.58	174 06 17.46	3.8528015	4.427

ROMERO, MERCED COUNTY, CALIF. (Not occupied.)

Cupola on the Romero School, about 5 miles northwest of town of Volta, on the Southern Pacific R. R.; road from Los Banos to Gustine passes school.

[Latitude 37° 07′ 49.509″. Longitude 121° 00′ 54.540″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bareillas	10 15 53.96	190 15 02.77	4.0710566	7.318
Christian	134 59 22.97	314 56 31.66	3.9951898	6.145
Milepost 162	269 27 52.77	89 33 29.43	4.1388420	8.554

ROUND, FRESNO COUNTY, CALIF.

On round hill north of Sanger.

Signal: A tree in cairn.

Station mark: Tablet in boulder.

[Latitude 36° 49′ 08.926″. Longitude 119° 30′ 34.328″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Kingsbury	6 16 11.74	186 14 39.08	4.5309734	21.102
Sanger	18 48 49.59	198 47 08.97	4.1118698	8.039
Granville	35 17 42.61	215 15 04.46	4.0547474	7.049
Fowler	35 13 37.15	215 07 40.97	4.4091957	15.942
Las Palmas	67 49 57.64	247 43 11.22	4.2595383	11.295
Fresno	69 56 52.01	249 46 51.75	4.4229203	16.454
Red Bank	93 01 02.37	272 57 47.37	3.9071625	5.018
Lone Gum	110 18 14.03	290 13 37.66	4.0854889	7.566
Hall	125 39 38.61	305 30 54.68	4.4245034	16.514
Copper	136 08 41.18	316 03 47.42	4.2426860	10.865
Mill	162 37 07.54	342 36 39.58	3.5881341	2.407
Red Mountain	243 33 22.06	63 37 20.49	4.0414461	6.836
Tivey	309 29 22.15	129 33 28.55	4.1215523	8.221
Campbell	329 58 04.92	150 01 11.96	4.1987067	9.819
Dinuba	340 08 32.00	160 12 53.79	4.5123564	20.217

RUGG, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: Center of smokestack at pump station, at Rugg, on Southern Pacific R. R.

[Latitude 36° 43′ 53.655″. Longitude 120° 00′ 15.307″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Kerman	79 53 07.90	259 51 07.07	3.7069745	3.165
Kearney	277 33 46.27	97 36 51.46	3.8894343	4.817
McMullin	339 50 57.57	159 52 09.67	3.9394826	5.405

SAMPSON, FRESNO COUNTY, CALIF.

On the point of a ridge, about 300 feet from the top, 4 miles northeast of Dunlap and one-eighth of a mile south of Gartners ranch house. It can be reached by taking the Millwood road from Dunlap 8½ miles to Sontag Point, thence going along the Sampson Flat road 3½ miles to the Gartner ranch house. A buckboard can be driven close to station. The station can also be reached by a trail from Dunlap.

Signal: Pine tree with white cloth, trimmed 40 feet from the ground. Position of signal computed.

Reference mark: Bronze tablet 40 feet east and 4 feet south of signal.

[Latitude 36° 46′ 09.745″. Longitude 119° 06′ 06.578″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Stokes	17 06 25.17	197 02 59.34	4.4649441	18.126
Smith	46 25 13.77	226 16 30.30	4.4782314	18.689
Orange Cove	49 03 42.86	228 56 13.40	4.3934012	15.373
Campbell	74 07 27.20	253 55 59.90	4.4721482	18.429
Bear Hill	80 55 19.29	260 48 49.85	4.2134869	10.159
Red Mountain	111 31 53.52	291 21 12.27	4.4547651	17.706

SANDY, FRESNO COUNTY, CALIF.

Station is on a sand dune 8 miles south and a little west of Kerman.
Signal: Quadripod with cross targets and flag.
Station mark: Iron bench mark centered under signal.

[Latitude 36° 38′ 39.136″. Longitude 120° 07′ 28.232″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Derrick	18 36 34.98	198 36 05.64	3.5830924	2.379
San Joaquin Tank	53 49 53.00	233 47 36.11	3.8490580	4.389
Jamesan	144 22 09.42	324 19 16.87	4.0899247	7.643
Kings	115 40 37.79	295 36 57.51	4.0070398	6.315
Kerman	213 03 39.50	33 05 57.42	4.0212703	6.526
McMullin	263 36 52.50	83 42 22.96	4.1409783	8.597

SANGER, FRESNO COUNTY, CALIF.

A large steel municipal water tank at Sanger.
Signal and station mark: Center of tank.

[Latitude 36° 42′ 31.594″. Longitude 119° 33′ 22.436″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fresno	98 40 13.87	278 31 54.90	4.3210465	13.014
Las Palmas	113 01 26.82	292 56 21.46	4.1386317	8.550
Granville	141 25 04.02	321 24 06.59	3.5822222	2.375
Copper	162 15 04.29	342 11 51.66	4.4165379	16.214
Red Bank	162 53 58.19	342 52 24.06	4.1224134	8.237
Round	198 47 08.97	18 48 49.59	4.1118698	8.039
Red Mountain	219 14 59.77	39 20 38.57	4.3453730	13.763
Campbell	276 44 21.13	96 49 12.00	4.0851381	7.559
Smith	306 35 20.16	126 42 53.45	4.3713314	14.611
Reedley	323 02 58.85	143 06 43.08	4.1912142	9.651

SAN JOAQUIN TANK, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: Center of white tank house (municipal) in town of San Joaquin.

[Latitude 36° 36′ 23.826″. Longitude 120° 11′ 17.696″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Kings	158 00 08.29	337 58 45.06	3.9658451	5.744
Sandy	233 47 36.11	53 49 53.00	3.8490580	4.389
Derrick	263 05 18.87	83 07 06.39	3.6544898	2.804

SAN JUAN, MERCED COUNTY, CALIF.

The center of a water tank on the Miller & Lux San Juan ranch, 8 miles north of Dos Palos.

Signal: Center of tank.

Station mark: Center of concrete foundation of tank.

[Latitude 37° 04′ 50.812″. Longitude 120° 39′ 23.921″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
White	41 30 42.69	221 24 03.49	4.3940425	15.396
Power	62 55 24.86	242 53 10.08	3.7927464	3.856
Los Banos Tank	82 33 57.46	262 27 08.23	4.2282697	10.510
Delta	119 02 56.36	298 59 57.09	3.9239558	5.216
Highland	133 25 01.88	313 21 03.91	4.1268982	8.322
Lucerne	262 35 27.97	82 37 44.66	3.7517153	3.508
Bridge	286 10 56.47	106 14 51.03	4.0005040	6.221
Golden Hoof	315 15 11.46	135 20 48.85	4.2943323	12.237
Belmont	328 18 35.13	148 19 47.67	3.7529990	3.518
Dos Palos	344 56 25.16	164 57 33.16	4.0312537	6.677

SANTA LUCIA, MONTEREY COUNTY, CALIF.

A station of the United States Coast and Geodetic Survey on eastern summit of highest peak of Santa Lucia Range. Best reached by wagon road up San Antonio Valley from Jolon to a point 13 miles past old mission; here leave road, turn to right up flat ridge for 1 mile, cross canyon to east and keep up ridge for 1 mile to just past an old log cabin; recross canyon to left side and follow trail to summit, rising 3,500 feet in about 4 miles.

Station mark: Cross in end of copper bolt in solid rock, over which is a concrete foundation 3 feet square and 10 inches deep, on which is a concrete pier 26 inches in diameter with a copper bolt with cross marking station center.

Reference marks: Holes drilled in outcropping rocks filled with lead, into which copper tacks were driven, and distant as follows: N. 6.88 feet, S. 7.18 feet, E. 5.91 feet, W. 10.08 feet. Concrete pier occupied for latitude in 1885 was 44 feet 1 inch from station in azimuth 227° 28′. The azimuth from center of station to frame pier used for the vertical circle in 1885 was 56° 14′ and distance was 5.486 meters. Stations occupied by the eclipse expedition of 1880 were a little north of west from the station and distant from it 546 feet and over.

[Latitude 36° 08′ 45.328″. Longitude 121° 25′ 05.937″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mount Toro (C. G. S.)	157 58 56.29	337 52 09.62	4.6584603	28.302
Santa Ana (C. G. S.)	191 06 13.77	11 12 51.48	4.9339816	.....
Hepsedam (C. G. S.)	250 29 21.13	70 50 25.69	4.7530109	.....
Castle Mountain (C. G. S.)	282 57 22.08	103 35 26.85	4.9994343	62.056
Rocky Butte (C. G. S.)	328 33 49.52	148 46 28.32	4.7951624	38.771
Boulder (U)	128 53 00.84	308 39 54.41	4.6290707	26.450
Chew (U)	143 50 46.95	323 45 29.24	4.3566443	14.125
Bishoff (U)	255 50 46.80	75 58 30.31	4.3061705	12.575
Eade (U)	257 32 40.11	77 48 34.75	4.6165346	25.697
Pine Creek (U)	285 20 29.35	105 27 13.69	4.2501683	11.054
Williams (U)	299 40 26.76	119 55 10.96	4.6368799	26.930
Jolon (U)	311 35 13.13	131 42 58.53	4.4228507	16.451
Red Rock (U)	331 32 31.97	151 41 38.66	4.6910257	30.505

C. G. S.=U. S. Coast and Geodetic Survey in 1885. U=C. F. Urquhart in 1917.

SHELL NO. 1, FRESNO COUNTY, CALIF. (Not occupied.)

Station is large smokestack at the Shell oil station about 10 miles north-northwest of Mendota, a small town on the Southern Pacific R. R.

[Latitude 36° 46′ 26.216″. Longitude 120° 41′ 09.250″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Panoche	52 33 44.04	232 30 56.09	3.9431269	5.451
White	138 16 40.08	318 11 05.45	4.3171585	12.898
Miller No. 2	205 15 50.50	25 17 16.80	3.9223302	5.196
Gruber	283 41 06.99	103 43 06.23	3.9062818	3.160
Tierra Loma	333 32 32.07	153 33 33.21	3.7552258	3.537

SHELL NO. 2, FRESNO COUNTY, CALIF. (Not occupied.)

Center of stack at the Shell oil station, about 15 miles west of Tranquility, on the Southern Pacific R. R.

[Latitude 36° 35′ 25.506″. Longitude 120° 31′ 07.939″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Telephone	182 00 53.54	2 01 03.04	4.0508452	6.985
Hermanhouse	226 28 37.35	46 35 53.96	4.3981829	15.543
Cantua	303 58 57.54	124 04 05.82	4.1912724	9.652

SCHOOL, MERCED COUNTY, CALIF. (Not occupied.)

Cupola on schoolhouse about 3 miles southwest of South End of Barn, at Joe Silva's ranch, 9 miles east of the town of Newman, on Southern Pacific R. R.

[Latitude 37° 19′ 29.650″. Longitude 120° 54′ 31.740″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
South End of Barn	233 23 35.98	53 24 58.85	3.6221862	2.603
Crow	99 42 01.03	279 33 20.85	4.3306488	13.305

SEMAS, MONTEREY COUNTY, CALIF.

On a very prominent hill 2.5 or 3 miles north from Bradley and on the east side of Salinas River and the Southern Pacific R. R. The land has been owned by a man named Semas, but the name is probably not well known. Animals can be ridden to summit by entering pasture at Bradley and going north down Salinas River to the first canyon, thence up canyon 0.5 mile to a small level place; cross canyon; thence go north up gulch through a gate and uphill to station.

Signal: An oak tree set in ground on most northern peak.

Station mark: A triangulation tablet set in rock placed in ground 1 meter north of signal. Position of tablet was computed. Azimuth from tablet to signal, 355° 45′; distance, 1.00 meter.

[Latitude 35° 53′ 15.437″. Longitude 120° 49′ 25.039″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rocky Butte	40 52 43.59	220 44 28.41	4.5125744	20.227
Williams	114 02 47.66	293 56 33.17	4.2434984	10.886
Powell	217 04 50.29	37 08 35.71	4.2028012	9.912
Stone Canyon	237 54 46.28	58 04 18.15	4.4591241	17.884
Castle Mountain	262 23 07.28	82 40 09.16	4.6439980	27.375
Works	294 39 10.40	114 47 13.46	4.3577320	14.161
Vineyard	309 49 44.67	129 55 01.36	4.2476951	10.995
Dresser	326 05 03.50	146 13 51.66	4.6107150	25.355
Fair Oaks	354 14 29.55	174 15 32.89	4.4340556	16.881

SERVICE, MADERA COUNTY, CALIF.

Station is windmill at the Service School, about 8 miles east of Madera.
Signal: Center of mill.
Station mark: Eight-inch well under mill.

[Latitude 36° 58′ 01.977″. Longitude 119° 55′ 15.767″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Greenleaf	7 58 11.29	187 57 38.84	3.9844702	5.995
Madera	86 25 03.20	266 20 00.20	4.0965713	7.761
Adobe	215 30 32.59	35 32 41.76	3.9606108	5.675
Deep Well	311 38 01.94	131 40 30.58	3.9133288	5.090

SHARON, MADERA COUNTY, CALIF.

A windmill at Sharon, a station on the Atchison, Topeka & Santa Fe Ry. between Merced and Fresno. The mill is at the north end of a warehouse on the east side of the track, and is opposite the station.
Signal: Center of mill.
Station mark: Pipe in the ground.

[Latitude 37° 06′ 01.238″. Longitude 120° 07′ 50.951″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Berenda School	15 43 40.65	195 42 53.00	3.8577427	4.478
Crumley	19 12 51.71	199 11 33.52	3.9888415	6.056
Fairmead	64 55 26.89	244 53 14.16	3.7783343	3.730
Chowchilla	103 58 35.69	283 53 53.22	4.0758752	7.400
Marguerite	150 27 10.57	330 25 36.57	3.8916362	4.842
Flat Top	185 27 36.12	5 28 20.74	4.2812386	11.874
Green	214 09 25.33	34 14 30.93	4.3461516	13.788
Daulton	254 55 57.30	75 01 18.90	4.1342778	8.465
Rabbit	257 07 28.40	77 14 43.27	4.2611284	11.336
Adobe	286 56 46.08	107 06 30.82	4.3990592	15.574
Talbot	308 35 11.51	128 38 54.10	4.0672925	7.255
Madera	338 12 10.96	158 14 42.44	4.2242262	10.413

SILAXO, FRESNO COUNTY, CALIF.

In a pasture field owned by Miller & Lux, Inc., 0.5 mile west of milepost 136 on the Pipe Line road, 4 miles northwest of Firebaugh and about 0.6 mile south of where same road crosses canal. It is 1 mile south and a little west of Silaxo oil pumping station.
Signal: Timber quadripod with cross targets and flag.
Station mark: Iron bench-mark post centered under signal.

[Latitude 36° 52′ 40.970″. Longitude 120° 31′ 46.377″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Miller No. 3	11 23 01.13	191 21 55.80	4.1367072	8.513
Miller Headquarters	17 50 15.45	197 49 17.60	3.8924525	4.851
Panoche	51 08 52.04	231 00 26.69	4.4294245	16.702
Miller No. 2	69 00 00.82	248 55 49.57	4.0459480	6.907
Hollingsworth	91 45 08.58	271 41 21.47	3.9720590	5.827
White	98 09 05.30	277 57 52.34	4.4476319	17.417
Silaxo Stack	191 00 24.55	11 00 36.23	3.4020890	1.568
Golden Hoof	196 39 42.84	16 40 44.61	3.9480602	5.513
West Power	227 27 28.48	47 29 54.29	3.9114933	5.068
Firebaugh	287 13 06.31	107 15 42.11	3.8282818	4.184

SILAXO STACK, FRESNO COUNTY, CALIF. (Not occupied.)

Station is the smokestack at oil station at Silaxo, on Southern Pacific Railroad between Firebaugh and South Dos Palos.

[Latitude 36° 54′ 01.342″. Longitude 120° 31′ 26.912″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Silaxo	11 00 36.23	191 00 24.55	3.4020890	1.568
Hollingsworth	77 28 11.58	257 24 12.73	4.0041040	6.273
Golden Hoof	198 54 14.51	18 55 04.61	3.8038730	3.956
Firebaugh	306 55 23.90	126 57 48.06	3.8717451	4.625

SMITH, FRESNO COUNTY, CALIF.

The highest point of Smith Mountain, about 6 miles southeast of Reedley.

Signal: Cairn 8 feet high.

Station mark: Chiseled circle under center of cairn.

Reference mark: Tablet 3.2 feet south of center of cairn. Position of signal computed.

[Latitude 36° 34′ 56.212″. Longitude 119° 20′ 42.990″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Dinuba	40 13 38.20	220 12 10.84	3.7529353	3.518
Kingsbury	67 58 15.35	247 50 54.45	4.2982711	12.349
Reedley	99 39 58.12	279 36 09.33	3.9857795	6.014
Parlier	100 49 40.73	280 43 08.05	4.2218216	10.356
Sanger	126 42 53.45	306 35 20.16	4.3713314	14.611
Campbell	151 45 13.20	331 42 30.42	4.1555507	8.890
Bear Hill	197 07 29.62	17 09 44.36	4.2790135	11.813
Orange Cove	214 16 21.22	34 17 35.31	3.7389986	3.407
Sampson	226 16 30.30	46 25 13.77	4.4782314	18.689
Orosi	295 36 57.87	115 40 01.30	3.9290562	5.277
Stokes	298 16 16.63	118 21 33.18	4.1765766	9.331
Yettem	321 13 06.53	141 16 31.00	4.1351443	8.482

SOUTHEAST COTTONWOOD, MADERA COUNTY, CALIF., FROM NORTH.

Station is the more southeastern of two cottonwood trees in pasture about 10 miles west of Madera and north of the Madera and Firebaugh road. It can be reached by auto.

Signal and station mark: Cottonwood tree. Position of signal computed.

Reference mark: A U. S. Geological Survey bench-mark post. Azimuth from tablet to signal, 92° 20′; distance, 16.5 feet.

[Latitude 36° 56′ 20.240″ (from north), 36° 56′ 20.244″ (from south), 36° 56′ 20.360″ (from west). Longitude 120° 15′ 08.409″ (from north), 120° 15′ 08.554″ (from south), 120° 15′ 08.613″ (from west).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Berenda Slough (west)	143 17 24.80	323 14 44.48	4.0422536	6.849
Berenda Slough	143 17 30.32	323 14 31.48	4.0422536	6.849
Fuller	188 04 14.33	8 04 38.18	3.8442016	4.341
Crumley	221 07 57.90	41 11 02.99	4.0630925	7.185
Madera	262 06 02.76	82 12 56.92	4.2357339	10.693
Miller & Lux Signal	274 01 41.48	94 04 40.04	3.8675666	4.581
Miller & Lux Signal (south)	274 01 50.24	94 04 48.78	3.8675076	4.580

SOUTHEAST COTTONWOOD, MADERA COUNTY, CALIF., FROM SOUTH.

[Latitude 36° 56′ 20.244″ (from south), 36° 56′ 20.240″ (from north), 36° 56′ 20.360″ (from west.). Longitude 120° 15′ 08.554″ (from south), 120° 15′ 08.409″ (from north), 120° 15′ 08.613″ (from west).

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Miller & Lux Signal (north)	274 01 41.04	94 04 40.04	3.8675666	4.581
Miller & Lux Signal	274 01 50.24	94 04 48.78	3.8675076	4.580
Last Chance	314 27 47.96	134 31 19.05	4.0864039	7.581
Aliso Mill	2 05 04.62	182 04 57.06	3.9335728	5.332
Aliso Mill (west)	2 04 46.63	182 04 39.08	3.9336920	5.334

SOUTHEAST COTTONWOOD, MADERA COUNTY, CALIF., FROM WEST.

[Latitude 36° 56′ 20.360″ (from west), 36° 56′ 20.240″ (from north), 36° 56′ 20.244″ (from south). Longitude 120° 15′ 08.613″ (from west), 120° 15′ 08.409″ (from north), 120° 15′ 08.554″ (from south).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Aliso Mill (south)	2 05 04.62	182 04 57.06	3.9335728	5.332
Aliso Mill	2 04 46.63	182 04 39.08	3.9336920	5.334
Aliso	37 48 42.82	217 46 26.93	3.9610265	5.680
Columbia	42 52 38.91	222 48 46.00	4.1424330	8.625
Firebaugh	64 27 11.90	244 19 48.74	4.3067411	12.592
Golden Hoof	94 33 35.42	274 24 37.50	4.3465805	13.802
Syphon	120 38 14.28	300 33 54.45	4.0940288	7.716
Berenda slough	143 17 24.80	323 14 44.48	4.0422536	6.849
Berenda slough (north)	143 17 30.32	323 14 31.48	4.0422536	6.849

SOUTH END BARN, MERCED COUNTY, CALIF.

A large white barn on the Joseph Silva ranch, 9 miles east of Newman, on the Newman-Livingston road.

Signal and station mark: South end of barn.

[Latitude 37° 20′ 50.672″. Longitude 120° 52′ 15.093″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gustine	48 13 19.20	228 08 37.94	4.1906813	9.639
Christian	49 14 42.83	229 06 36.52	4.4174049	16.246
School	53 24 58.85	233 23 35.98	3.6221862	2.603
Crow	92 37 07.81	272 27 04.59	4.3890577	15.220

STOCKDALE, MONTEREY COUNTY, CALIF.

On highest point of a low brushy mountain, about 12 miles from Parkfield and 5 miles from Stone Canyon, on west side of road between those two places. It is west of and about 0.75 mile from Mr. Stockdale's camp and new ranch. Mr. Stockdale's place is less than 1 mile from the county road. Animals can be ridden to the summit of hill.

Signal: A pine tree set in the ground on highest part of the hill.

Station mark: A triangulation tablet. Position of table computed. Azimuth from tablet to signal, 134° 46′; distance, 2.00 meters.

[Latitude 35° 59′ 15.344″. Longitude 120° 34′ 51.150″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Vineyard	20 26 52.04	200 23 36.85	4.3790687	14.874
Powell	97 35 52.05	277 31 04.14	4.0926416	7.691
Stone Canyon	211 02 03.78	31 03 02.59	3.6865267	3.019
Castle Mount	283 46 36.87	103 55 06.76	4.3503908	13.923

STOKES, TULARE COUNTY, CALIF.

On a sharp butte in the middle of Stokes Mountain, 5 miles southeast of Orosi There is a higher butte about 0.5 mile east of station. Animals can be ridden to the top, the easiest approach being from the south.

Signal: Cairn on butte.

Station mark: Chiseled circle under center of cairn.

Reference mark: Bronze tablet 3.7 feet east of center of signal. Position of signal computed.

[Latitude 36° 31′ 05.133″. Longitude 119° 11′ 51.445″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Yettem	53 02 53.84	233 01 01.97	3.7677174	3.640
Smith	118 21 33.18	298 16 16.63	4.1765766	9.331
Orosi	121 48 11.42	301 45 58.30	3.8158841	4.067
Campbell	134 41 00.03	314 33 00.41	4.4484236	17.449
Orange Cove	139 02 30.03	318 58 27.37	4.1886054	9.593
Bear Hill	163 17 56.84	343 14 54.32	4.4217145	16.408
Sampson	197 02 59.34	17 06 25.17	4.4649441	18.126

STONE, SAN LUIS OBISPO COUNTY, CALIF.

A station of the U. S. Coast and Geodetic Survey.

On the higher or eastern one of two conical peaks about 3 miles in a northerly direction from the town of Cayucos. About 15 meters from the station, on the west side of the hill, was a stone fence running across the top of the hill from the northwest to the southeast side. The station was marked by a copper tack in a lead bolt driven into a hole 1 inch in diameter drilled into the solid rock. The reference marks were copper tacks in lead bolts driven into three holes in the solid rock, 10 inches below surface of ground; to the north, 2 feet 5 inches; to the south, 2 feet 1 inch; to the east, 2 feet 6 inches. Over each was placed a redwood stub 4 by 4 inches, with a copper tack in the top.

[Latitude 35° 29′ 14.760″ (C. G. S.), 35° 29′ 14.732″ (U). Longitude 120° 57′ 00.244″ (C. G. S.), 120° 57′ 00.226″ (U).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Piedras Blancos Lighthouse (C. G. S.)	123 19 09.1	303 07 30.4	4.558071	.....
Rocky Butte (C. G. S.)	153 30 12.1	333 26 24.1	4.344172	.....
San Luis (C. G. S.)	303 12 04.6	123 25 35.4	4.626224	.....
Saddle Peak (C. G. S.)	333 57 13.5	154 02 41.8	4.514292	.....
Juhl (U)	258 52 18.86	78 56 15.06	4.0190373	6.492
Rocky Butte (U)	153 30 12.07	333 26 24.10	4.3441912	13.726

C. G. S.=U. S. Coast and Geodetic Survey in 1883. U=C. F. Urquhart in 1917.

STONE CANYON, MONTEREY COUNTY, CALIF.

On a prominent brush-covered mountain about 1.5 miles northwest of Stone Canyon coal mine. There is a road under south end of mountain, and animals can be ridden from there to summit. There are higher mountains north and east of this point, any one of which would make as good or a better triangulation station, but none could be plotted on quadrangle to be surveyed.

Signal: A pine tree set in the ground.

Station mark: A triangulation tablet. Position of tablet was computed.

[Latitude 36° 01′ 30.411″. Longitude 120° 33′ 11.105″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Vineyard	22 14 41.33	202 10 27.38	4.4582886	17.850
Stockdale	31 03 02.59	211 02 03.78	3.6865267	3.019
Semas	58 04 18.15	237 54 46.28	4.4591241	17.884
Powell	80 18 40.66	260 12 53.80	4.1757593	9.313
Castle Mountain	296 16 20.56	116 23 51.90	4.3318977	13.343
Estrella	354 47 22.27	174 48 31.19	4.5123908	20.218

SYPHON, MADERA COUNTY, CALIF.

Station is center of windmill tower, on side of ditch, near small lake about 10 miles east of Dos Palos.

[Latitude 36° 59′ 45.419″. Longitude 120° 22′ 20.686″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Firebaugh	26 41 36.55	206 38 32.69	4.2272448	10.486
West Power	46 33 31.75	226 30 17.61	4.0416227	6.839
Golden Hoof	68 12 59.26	248 08 20.86	4.0910395	7.663
Johnson	121 04 59.95	300 59 52.97	4.1674508	9.137
Ash	176 22 56.63	356 22 42.59	3.9603124	5.671
Berenda Slough	238 26 44.91	58 28 11.55	3.6814664	2.984
Fuller	267 01 49.03	87 06 19.91	4.0674339	7.257
Southeast Cottonwood	300 33 54.45	120 38 14.28	4.0940288	7.716
Aliso	339 22 42.22	159 24 45.88	4.1604948	8.992

TALBOT, MADERA COUNTY, CALIF.

On the east side of the Madera-Raymond road about 5 miles north-northeast of Madera.

Signal: Quadripod with cross targets.

Station mark: Iron bench mark centered under signal.

[Latitude 37° 02′ 04.847″. Longitude 120° 01′ 41.670″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Madera	19 23 39.03	199 22 28.17	3.9431201	5.451
Crumley	81 12 31.13	261 07 30.62	4.0963184	7.757
Berenda School	91 50 47.80	271 46 17.76	4.0447607	6.888
Sharon	128 38 54.10	308 35 11.51	4.0672925	7.255
Daulton	200 28 29.77	20 30 08.46	4.0625406	7.176
Rabbit	217 24 27.28	37 27 59.14	4.1545450	8.869
Adobe	270 09 07.42	90 15 09.30	4.1717116	9.227

TANKS, FRESNO COUNTY, CALIF. (Not occupied.)

Standard Oil Co.'s Mendota pump station.

Station mark: Center of tank house.

[Latitude 36° 37′ 53.686″. Longitude 120° 18′ 43.816″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cantua	23 04 37.47	203 02 22.53	4.1576810	8.934
Borland	164 36 40.68	344 36 06.12	3.7336757	3.365
Jamesan	220 05 19.05	40 09 07.99	4.1732567	9.260
Kings	232 40 58.36	52 43 59.33	3.9810611	5.949

TELEPHONE, FRESNO COUNTY, CALIF.

The windmill derrick at the Miller & Lux Co.'s sheep camp, known as the Telephone ranch, 10 miles from Mendota, a town on the Southern Pacific R. R., and 0.5 mile north of the Idria-Mendota road. The Chaney ranch is 4 miles west on same road and is the only ranch of importance between Mendota and Idria. Hay and stock water can be had at the Telephone ranch, but no water fit for drinking.

Station mark: The pipe extending into ground.

[Latitude 36° 41′ 30.991″. Longitude 120° 30′ 52.018″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Shell No. 2	2 01 03.04	182 00 53.54	4.0508452	6.985
San Benito (1908)	18 01 42.54	197 57 04.89	4.5748389	23.345
Chaney (1908)	52 58 34.39	232 56 20.56	3.8432915	4.332
Buck (1908)	63 08 46.06	242 55 57.09	4.5555836	22.332
Indian (1908)	73 24 41.49	253 17 06.26	4.2957845	12.278
Panoche	99 39 44.38	279 30 47.63	4.3541563	14.045
Miller No. 3 (1908)	150 42 19.89	330 40 42.19	3.9181290	5.146
Helm	226 08 43.25	46 13 39.50	4.2310930	10.579
Mendota Oil (1908)	227 57 46.84	48 01 57.80	4.1464244	.....
Mendota (1908)	242 28 40.44	62 33 47.13	4.1567673	.....
Hermanhouse	251 20 44.18	71 27 51.79	4.2724558	11.636
Borland	275 00 53.67	95 07 34.13	4.2229194	10.382
Tanks (1908)	290 16 02.85	110 23 17.63	4.2852279	.....
East Stack	315 29 52.69	135 33 47.10	4.1438113	8.653
Cantua (1908)	327 55 15.38	148 00 14.53	4.3712011	14.607
Joaquin (1908)	353 02 07.91	173 04 07.98	4.6182998	25.802

TIERRA LOMA, FRESNO COUNTY, CALIF.

Station is windmill at the Tierra Loma School, 20 miles south of Dos Palos.

Signal: Center of mill.

Station mark: Center of well.

[Latitude 36° 43′ 40.905″. Longitude 120° 39′ 27.069″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Indian	32 26 21.73	212 23 54.00	4.0588652	7.116
Panoche	88 35 06.15	268 31 17.18	3.9779082	5.906
Shell No. 1	153 33 33.21	333 32 32.07	3.7552258	3.537
Miller No. 2	184 50 59.61	4 41 24.67	4.1038132	7.892
Gruber	211 43 38.63	31 44 36.66	3.6604077	2.843
Miller No. 3	249 43 47.76	69 47 18.14	3.9684437	5.778

TIVEY, FRESNO COUNTY, CALIF. (Not occupied.)

[Latitude 36° 44′ 35.794″. Longitude 119° 23′ 42.786″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Campbell	23 40 16.25	203 39 20.67	3.7595096	3.572
Round	129 33 28.55	309 29 22.15	4.1215523	8.221
Red Mountain	178 31 15.14	358 31 06.83	4.1244156	8.275
Bear Hill	268 15 01.33	88 19 03.89	4.0027310	6.253

TORO MOUNT, MONTEREY COUNTY, CALIF.

A station of the U. S. Coast and Geodetic Survey.

On the untimbered range of mountains bordering the Salinas Valley on the west, on the smooth, grassy hill about 500 yards south of A. B. Parson's house and on his land. It is easily reached from Salinas City and is in full view of the town.

Station mark: A copper bolt set in a flat-topped rock 2 feet beneath the surface of the ground, and a cross in copper bolt in top of pier built of concrete and topped with brick and cement. Two other piers are standing northwest of the station.

[Latitude 36° 31′ 34.712″ (B., C. G. S.), 36° 31′ 34.742″ (C. G. S.*) Longitude 121° 36′ 32.276″ (B., C. G S.), 121° 36′ 32.284″ (C. G. S.*).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Loma Prieta (C. G. S.)	162 12 31.32	342 04 05.43	4.8338624	
Mocho (C. G. S.)	182 34 42.13	2 36 38.58	5.0240270	
Santa Ana (C. G. S.)	218 31 04.10	38 44 33.91	4.7311660	
Loma Prieta (C. G. S.*)	162 12 32.85	342 04 06.98	4.8338515	
Mocho (C. G. S.*)	182 34 42.61	2 36 39.07	5.0240231	
Santa Ana (C. G. S.*)	218 31 06.92	38 44 36.72	4.7311612	
Ventana (B.)	12 57 22.61	192 54 55.91	4.4395357	17.096
Boulder (B.)	45 53 42.90	225 47 20.74	4.3487418	13.871
Chalk (B.)	100 44 39.43	280 39 27.34	4.1228971	8.246
Pole (B.)	321 45 48.39	141 50 00.10	4.2317425	10.595
Santa Lucia (B.)	337 52 09.62	157 58 56.29	4.6584603	28.302
Chew (B.)	351 09 35.40	171 11 03.72	4.3829144	15.006

(C. G. S.)=U. S. Coast and Geodetic Survey in 1885, (C. G. S.*)=U. S. Coast and Geodetic Survey in 1906, (B.)=L. F. Biggs in 1917.

UNDERWOOD, MERCED COUNTY, CALIF. (Not occupied.)

Windmill derrick at the Miller & Lux Underwood ranch, about 7 miles east of Ingomar on the Southern Pacific R. R.

[Latitude 37° 11′ 32.236″. Longitude 120° 50′ 19.483″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Milepost 162	15 47 39.92	195 46 53.21	3.8459179	4.358
Bareillas	43 59 12.88	223 51 58.51	4.4086518	15.922
Ingomar	83 12 56.26	263 08 15.13	4.0627718	7.180
Christian	90 23 17.20	270 14 01.90	4.3552129	14.079
Fairmont	144 51 36.50	324 50 18.74	3.7408993	3.422
Highland	296 12 14.62	116 14 52.28	3.8563848	4.464

VENTANA, MONTEREY COUNTY, CALIF. (Not occupied.)

Summit of sharp peak near the Ventanos.

[Latitude 36° 17′ 04.765″. Longitude 121° 40′ 39.456″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chalk	166 45 29.88	346 42 44.72	4.4782974	18.692
Toro Mount	192 54 55.91	12 57 22.61	4.4395357	17.096
Chew	253 20 14.38	73 24 08.77	4.0132896	6.407

VINEYARD, SAN LUIS OBISPO COUNTY, CALIF.

On the highest point of a bald ridge 3 miles northeast of San Miguel, a town on the Southern Pacific R. R. (Coast Line). It can be reached on horseback from almost any direction, but the best route from San Miguel is by way of Mahony Canyon. Cross the Salinas River on bridge at San Miguel; on east side of river there are three roads, take the middle one and go uphill and along this road to first road turning to left. This road goes around corner of fence and downhill to Mahony Canyon and up the canyon passing through a gate. After passing through this gate go 0.25 mile along road to first gate in fence to the west or left hand; go through this gate and up ridge to summit.

Signal: An oak tree set in the ground.

Station mark: A triangulation tablet set in rock 0.94 meter northeast of signal. Position of tablet was computed. Azimuth from tablet to signal, 50° 16′; distance, 0.94 meter.

[Latitude 35° 47′ 07.497″. Longitude 120° 40′ 24.133″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Fair Oaks	34 45 14.03	214 41 01.53	4.2808062	11.862
Rocky Butte	69 14 41.10	249 01 10.69	4.5720691	23.196
Hellman	84 37 24.55	264 34 04.51	3.9360395	5.363
Lynch	86 55 03.93	266 44 07.46	4.4509332	17.550
Williams	122 03 50.88	301 52 19.91	4.5424997	21.670
Semas	129 55 01.36	309 49 44.67	4.2476951	10.991
Powell	170 43 30.24	350 41 58.26	4.3870387	15.149
Stockdale	200 23 36.85	20 26 52.04	4.3790687	14.874
Stone Canyon	202 10 27.38	22 14 41.33	4.4582886	17.850
Castle Mount	240 22 33.77	60 34 17.50	4.5395326	21.522
Works	255 44 12.49	75 46 58.59	3.8667339	4.572
Estrella	292 44 00.56	112 49 22.33	4.1761640	9.322
Dresser	337 54 46.84	157 58 18.82	4.3861901	15.120

WEST BUTTE, MARIPOSA COUNTY, CALIF.

On the west one of three buttes on the east edge of the San Joaquin Valley, 3 miles north of the Grade ranch, and about 20 miles northeast of Merced. It can be reached by following the road east from Merced to Tuttle, a station on the Atchison, Topeka & Santa Fe Ry., thence 1 mile north to Bear Creek bridge, thence along the main road on the south side of Bear Creek to a point where the road turns to the Grade ranch; thence by the ranch through pastures to the point.

Signal: A tree braced by poles and rock on highest point of butte.

Station mark: A triangulation tablet set in rock under center of tree.

[Latitude 37° 25′ 14.820.″ Longitude 120° 13′ 58.266″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Le Grand	2 41 24.74	182 41 05.26	4.2268546	10.476
Planada	28 52 54.28	208 49 36.32	4.2211092	10.339
Hurricane	50 40 18.46	230 36 39.87	4.0589318	7.117
Blacksmith	83 45 34.87	263 40 02.21	4.1317959	8.417
Green	308 37 06.40	128 45 55.93	4.4397964	17.106
Flat Top	326 40 51.91	146 45 19.51	4.2963446	12.294

WEST POWER, FRESNO COUNTY, CALIF.

The west one of two high poles that convey the power line across San Joaquin River at a point 5 miles north of Firebaugh. The pole leans slightly, and the cross arm about 15 feet from top was used.

Signal and station mark: The power pole.

Reference mark: Iron bench mark set at northeast corner of a warehouse, 14.6 feet from pole. Position of pole computed. Azimuth from bench mark to signal, 178° 23′; distance, 14.6 feet.

[Latitude 36° 55′ 39.800″. Longitude 120° 27′ 43.566″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Silaxo	47 29 54.29	227 27 28.48	3.9114933	5.063
Golden Hoof	130 47 11.12	310 45 46.99	3.6603027	2.842
Syphon	226 30 17.61	46 33 31.75	4.0416227	6.839
Aliso	294 29 16.98	114 34 34.41	4.1579846	8.940
Firebaugh	356 48 59.36	176 49 09.48	3.8762201	4.673

WHITE, MERCED COUNTY, CALIF.

On a bald plateau about 4 miles southwest of Miller & Lux Co.'s Jamison ranch, which is on the westernmost canal and 9 miles south of Los Banos. Station is about 11 miles by road west of South Dos Palos. The signal is on a smooth, grass-covered hill with no rocks on it. There is a point a little higher about 0.25 mile south. Animals

can be ridden to point, and a light wagon may be driven to it, though the hill is rather steep.

Signal: A 4 by 4-inch pole reaching 12 feet above ground and bearing two targets at right angles to each other.

Station mark: Triangulation tablet in rock placed in ground 0.65 meter northwest of signal. The rock is 6 inches above ground on the northwest side of tablet.

[Latitude 36° 54′ 48.435″. Longitude 120° 50′ 27.300″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bonanza (1908)	46 16 03.78	226 11 02.36	4.2364938	10.711
Bareillas (1908)	125 23 37.82	305 16 29.54	4.3343198	13.417
Pipe Line	143 40 46.98	323 36 59.72	4.1978358	9.799
Volta (1908)	158 53 48.87	338 50 39.26	4.3346184	13.427
Los Banos (1908)	177 14 08.56	357 13 49.50	4.2102514	10.083
Los Banos Tank	178 39 32.25	358 39 22.92	4.2140071	10.171
Power	214 36 06.97	34 40 31.53	4.2818150	11.890
San Juan	221 24 03.49	41 30 42.69	4.3940425	15.396
Oil Stack (1908)	234 22 12.82	54 27 05.63	4.1708242	9.208
Belmont	234 35 06.76	54 42 58.16	4.3759685	14.768
Dos Palos	246 50 14.77	66 58 01.42	4.3197460	12.975
South Dos Palos (1908)	251 12 05.25	71 18 47.80	4.2431390	10.876
Golden Hoof	261 18 55.45	81 31 10.80	4.4861133	19.031
Silaxo	277 57 52.34	98 09 05.30	4.4476319	17.417
Hollingsworth	281 09 40.43	101 17 06.20	4.2727986	11.645
Ora Loma	287 12 20.40	107 17 06.15	4.0912602	7.667
Miller No. 2 (1908)	294 25 41.90	114 32 54.23	4.2811679	11.872
Miller No. 1 (1908)	295 07 03.74	115 10 22.20	3.9562094	5.618
Shell No. 1	318 11 05.45	138 16 40.08	4.3171585	12.898
Panoche Mountain	341 42 12.49	161 44 58.70	4.3408881	13.622

WILLIAMS, MONTEREY COUNTY, CALIF.

Station built by L. F. Biggs in October, 1916. Signal is on highest point of a mountain, locally known as Williams Mountain. It can be reached from Lockwood, a post office, hotel, and store in the San Antonio Valley. Go due east from Lockwood about 1.5 miles or 2 miles, passing through two gates, thence northeast on west side of a plowed field about 0.75 mile and through another gate. This is as far as a wagon can be taken. From this gate there is a good trail, known as the horse trail, going east and southeast to canyon at foot of mountain. Before reaching canyon a gate is passed through a one-wire fence; when canyon at foot of mountain is reached go down it about 100 yards and through another gate, thence up ridge on south side of summit

Signal: A pine tree set in ground about 2 feet and guyed with wire.

Station mark: A triangulation tablet in rock. The original mark was too near the tree to set the instrument over it, so it was moved 0.86 meter about east of tree. Signal was not changed though it was dropped 2 feet in the ground to make it more secure. Position of tablet was computed. Azimuth from tablet to signal, 99° 19′; distance, 0.86 meter.

[Latitude 35° 57′ 06.577″. Longitude 121° 00′ 03.402″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rocky Butte	9 22 58.39	189 20 56.31	4.5077331	20.002
Red Rock	33 33 06.35	213 27 31.69	4.4145015	16.138
Graves	48 45 24.83	228 41 05.58	4.1687794	9.165
Jolon	102 30 49.89	282 23 51.69	4.2617385	11.352
Santa Lucia	119 55 10.96	299 40 26.76	4.6368799	26.930
Pine Creek	129 29 45.23	309 21 44.89	4.4227866	16.449
Bishoff	145 54 59.25	325 47 57.01	4.5047955	19.868
Eade	185 22 32.97	5 23 40.36	4.4842617	18.950
Powell	257 35 27.71	77 45 28.32	4.4186037	16.291
Castle Mount	271 08 40.76	91 31 58.16	4.7758227	37.083
Semas	293 56 33.17	114 02 47.66	4.2434984	10.886
Vineyard	301, 52 19.91	122 03 50.88	4.5424997	21.670
Hellman	312 28 40.07	132 36 50.54	4.4549712	17.714
Fair Oaks	331 10 27.19	151 17 43.97	4.5906538	24.210
Lynch	355 57 05.89	175 57 38.95	4.3027095	12.476

WORKS. MONTEREY COUNTY, CALIF.

On ridge 9 miles east of San Miguel, on land owned by Mr. Works; F. E. Lowe's Estate ranch house is 0.75 mile northward from signal. From San Miguel cross river and take middle one of three roads (signboard "Parkfield via Hog Canyon"); follow this road eastward and turn up the canyon at a schoolhouse at forks in road, at a sharp bend in road where there is a signboard reading "San Miguel 9 miles, Parkfield 17 miles." Go through a gate and follow road northward 0.5 mile from where a deserted cabin can be seen 0.5 mile westward. The signal is on a ridge 0.25 mile west of this cabin and 1 mile northwest of point where main road was left.

Signal: Timber structure with white target.

Station mark: Bronze tablet set in rock flush with ground under signal. Position of tablet computed.

[Latitude 35° 48′ 06.221″. Longitude 120° 35′ 40.136″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Vineyard	75 46 58.59	255 44 12.49	3.8667339	4.572
Semas	114 47 13.46	294 39 10.40	4.3577320	14.161

YETTEM, FRESNO COUNTY, CALIF. (Not occupied.)

Station mark: Cupola on schoolhouse at Yettem crossroads.

[Latitude 36° 29′ 10.856″. Longitude 119° 14′ 59.502″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Smith	141 16 31.00	321 13 06.53	4.1351443	8.482
Campbell	146 40 01.73	326 33 54.39	4.4446605	17.299
Stokes	233 01 01.97	53 02 53.84	3.7677174	3.640

Bonanza, Carrisalito Springs, Center School, Ortigalita, Panoche, and Tumey Hills quadrangles.

FRESNO AND MERCED COUNTIES.

In the summer of 1919 L. F. Biggs extended triangulation over the above-named quadrangles. Twelve points were located, based on stations Bonanza and White, North American datum.

BONANZA, MERCED COUNTY, CALIF.

On a high bald peak, on which oak trees are growing just below the summit on the north side, about 3 miles northeast of Bonanza post office. A road leads to Bonanza from Tres Pinos on the Southern Pacific R. R. (distance 24 miles); thence up canyon 1 mile to Mr. Sepulveda's ranch. From this place follow trail to summit. Animals can be ridden all the way up. Station can also be reached from San Joaquin side by going up a wood road to summit, thence along ridge to highest point.

Signal and station mark: A cairn 8 feet high and triangulation tablet in rock placed under its center.

[Latitude 36° 48′ 21.558″. Longitude 120° 58′ 49.786″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Wright	178 45 46.10	358 45 37.10	4.2551166	10.677
Valley Pipe Line 5	205 30 04	25 33 36	4.30818	12.634
White	226 11 02.36	46 16 03.78	4.2364938	10.711
Laguna Seca Flag	240 31 13.02	60 36 04.37	4.1407282	8.592
Langan	244 54 19.36	64 57 44.68	3.9718627	5.824

CARRISALITO, MERCED COUNTY, CALIF.

On high, dome-shaped hill just west of the Carrisalito ranch, owned by Arbura Bros. There is a growth of cedar trees on north slope of hill.

Station and signal: A rock monument with tree in center.

Reference mark: A tablet 1 foot east of signal.

[Latitude 36° 52′ 02.22″. Longitude 121° 01′ 51.36″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Wright	201 39 22.46	21 41 02.51	4.0479295	6.939
Valley Pipe Line 5	228 53 55	48 59 13	4.24494	10.922
White	253 06 47.04	73 13 37.67	4.2478847	10.996
Langan	282 15 24.00	102 20 38.38	4.1235201	8.258

CHANEY, FRESNO COUNTY, CALIF.

The windmill derrick at the Chaney ranch, 14 miles from Mendota, on the Mendota-Idria road. This is the only ranch of importance on this road between Mendota and Idria. There is sufficient hay and water here, though drinking water has to be hauled from Mendota. The ranch is owned by the Hollister Co. and is sometimes called the Hollister ranch.

Station mark: The pipe extending into ground.

[Latitude 36° 39′ 14.758″. Longitude 120° 34′ 36.094″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tumey	29 03 53	209 00 54	4.17760	9.352
Indian	83 46 01	263 42 39	4.12871	8.357
Tierra Loma	138 35 46	318 36 48	4.03864	6.792
Dux	189 48 28	9 46 28	4.19534	9.743
Telephone	232 56 21	52 58 34	3.84329	4.332
Levis	282 34 57	102 41 05	4.19361	9.704

DUX, FRESNO COUNTY, CALIF. (Not occupied.)

Station is a high derrick of a well, 3.0 miles south of Miller & Lux sheep ranch, which is about 5 miles southwest from Firebaugh.

Signal: The derrick.

Station mark: Pipe in well.

[Latitude 36° 47′ 36.06″. Longitude 120° 32′ 48.94″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chaney	9 46 28	189 45 28	4.19534	9.743
Tumey	19 13 44	199 09 45	4.48140	18.827
Tierra Loma	53 45 07	233 41 09	4.08812	7.611

INDIAN, FRESNO COUNTY, CALIF.

On a bald mountain at the head of Indian Valley and on the north side of Panoche Creek. It is about 7 miles northeast by east of Panoche post office. The Panoche-Mendota road intersects the road from Idria 4 miles south of the Kern oil well. From the Kern oil well the signal can be seen, probably 5 miles distant. Animals can be ridden up almost any of the ridges leading to the highest point.

Signal: Cairn 7 feet high.

Station mark: Triangulation tablet set in rock; distant 1.60 meters from signal, azimuth 41° to signal.

See Bulletin 440 N, pp. 69 and 90.

[Latitude 36° 38′ 27.298″. Longitude 120° 43′ 34.341″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tierra Loma	212 23 54	32 26 22	4.05886	7.116
Chaney	263 42 39	83 48 01	4.12871	8.357
Tumey	332 32 36	152 35 02	4.11989	8.189

LAGUNA SECA FLAG, MERCED COUNTY, CALIF. (Not occupied.)

On highest point of hill, 1 mile east of Laguna Seca ranch house.

Station mark: Small cairn with 2 by 2 redwood flagpole.

[Latitude 36° 52′ 02.025″. Longitude 120° 50′ 43.82″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bonanza	60 36 04.37	240 31 13.02	4.14073	8.592
Wright	129 58 57.90	309 53 57.02	4.20882	10.050
White	184 33 30.64	4 33 40.56	3.71147	3.198

LANGAN, MERCED COUNTY, CALIF.

On the highest point of hill, 2 miles southeast of F. E. Langan's ranch house and about 16 miles south of Los Banos.

Signal: A lumber structure with cross targets.

Station mark: A bronze triangulation tablet in rock flush with ground under signal.

[Latitude 36° 50′ 30.38″. Longitude 120° 53′ 07.21″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bonanza	64 57 44.68	244 54 19.36	3.9718627	5.824
Carrisalito	102 20 38.38	282 15 24.00	4.1235201	8.258
Wright	146 11 57.92	326 08 23.23	4.2014256	9.880
White	206 27 11.98	26 28 47.95	3.9487170	5.522

LEVIS, FRESNO COUNTY, CALIF. (Not occupied.)

Station is a smokestack at Levis pump station, 8 miles south of Mendota.

Station mark: Center of stack.

[Latitude 36° 37′ 23.95″. Longitude 120° 24′ 22.67″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tumey	66 42 22	246 34 16	4.39042	15.268
Chaney	102 41 03	282 34 57	4.19361	9.704
Telephone	128 15 04	308 11 11	4.09021	7.648

TELEPHONE, FRESNO COUNTY, CALIF.

The windmill derrick at the Miller & Lux Co.'s sheep camp, known as the Telephone ranch, 10 miles from Mendota, a town on the Southern Pacific R. R., and 0.5 mile north of the Idria–Mendota road. The Chaney ranch is 4 miles west on the same

road and is the only ranch of importance between Mendota and Idria. Hay and stock water can be had at the Telephone ranch but no water fit to drink.

Station mark: The pipe extending into ground.

[Latitude 36° 41′ 30.991″. Longitude 120° 30′ 52.018″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chaney	52 58 34	232 56 21	3.04329	4.532
Levis	308 11 11	128 15 04	4.09021	7.648

TIERRA LOMA, FRESNO COUNTY, CALIF.

Station is windmill at the Tierra Loma Schoolhouse 20 miles south of Dos Palos.

Signal: Center of mill.

Station mark: Center of well.

[Latitude 36° 43′ 40.905″. Longitude 120° 39′ 27.069″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Indian	32 26 21.73	212 23 54.00	4.0588652	7.116
Panoche	88 35 06.15	269 31 17.18	3.9779082	5.906
Shell No. 1	153 33 33.21	333 32 32.07	3.7552258	3.537
Miller No. 2	184 50 59.61	4 41 24.67	4.1038132	7.892
Gruber	211 43 38.63	31 44 36.66	3.6604077	2.843
Miller No. 3	249 43 47.76	69 47 18.14	3.9684437	5.778
Tumey	00 11 59	180 11 57	4.32968	13.275
Indian	32 26 22	212 23 54	4.05886	7.116
Dux	233 41 09	53 45 07	4.08812	7.611
Chaney	318 36 48	138 39 46	4.03864	6.792

TUMEY, FRESNO COUNTY, CALIF.

On a high foothill 5 miles south of mouth of Panoche Canyon. From Mendota go 20 miles southwestward to mouth of Panoche Canyon; continue up canyon 5 miles to forks of New Idria and Panoche roads, thence southeastward along trail up west side of canyon. Trail passes just east of station.

Signal: A 2 by 2 inch redwood pole bearing a flag.

Station mark: A sandstone boulder, in which is a 1-inch drill hole, at base of flag.

Latitude 36° 32′ 07.82″. Longitude 120° 39′ 20.07″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Indian	152 35 02	332 32 36	4.11989	8.189
Tierra Loma	180 11 57	00 11 59	4.32968	13.275
Chaney	209 00 54	29 03 53	4.17760	9.357
Dux	199 09 45	19 13 44	4.48140	18.827
Levis	246 34 16	66 42 22	4.39042	15.268

VALLEY PIPE LINE NO. 5, MERCED COUNTY, CALIF.

Station and signal: Center of smokestack at Valley Pump Line Co.'s station about 8 miles south of Los Banos.

[Latitude 36° 58′ 16.73″. Longitude 120° 52′ 55.90″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bonanza	25 33 36	205 30 04	4.30818	12.634
Carrisalito	48 59 15	228 53 55	4.24494	10.922
Wright	82 44 37	262 40 56	3.96376	5.716

WHITE, MERCED COUNTY, CALIF.

On a bald plateau about 4 miles southwest of the Miller & Lux Co.'s Jamison ranch, which is on the westernmost canal and 9 miles south of Los Banos. It is about 11 miles by road west of South Dos Palos. The signal is on a smooth, grass-covered hill with no rock on it. There is a point a little higher about 0.25 mile south. Animals can be ridden to station; a light wagon even may be driven to it, though the hill is rather steep.

Signal: A 4 by 4 inch pole, standing 12 feet above ground, on which are two targets at right angles to each other.

Station mark: Triangulation tablet in rock placed in ground 0.65 meter northwest of signal. The rock is 6 inches above ground on the northwest side of tablet.

[Latitude 36° 54′ 48.435″. Longitude 120° 50′ 27.300″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Laguna Seca Flag	4 33 40.56	184 33 30.64	3.71147	3.198
Langan	26 28 47.95	206 27 11.98	3.9487170	5.522
Bonanza	46 16 03.78	225 11 02.36	4.2364938	10.711
Carrisalito	73 13 37.67	253 06 47.04	4.2478847	10.996
Wright	112 21 01.33	292 15 50.36	4.1411907	8.601

WRIGHT, MERCED COUNTY, CALIF.

On highest point of hill, 1 mile south of Los Banos Creek and 2 miles northeast of Gaston Bede ranch house.

Station mark: Cross on rock flush with ground under small cairn.

Signal: A timber structure on which are cross targets.

Reference mark: A bronze tablet 24.6 feet from signal, azimuth 64° 08′.

[Latitude 36° 57′ 35.87″. Longitude 120° 59′ 04.78″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Carrisalito	21 41 02.51	201 39 22.46	4.0479295	6.939
Valley Pipe Line	262 40 56	82 44 37	3.96376	5.716
White	292 15 50.36	112 21 01.33	4.1411907	8.601
Laguna Seca Flag	309 53 57.02	129 58 57.90	4.20882	10.050
Langan	326 08 23.23	146 11 57.92	4.2014256	9.880
Bonanza	358 45 37.10	178 45 46.10	4.2351166	10.677

Avenal, Lapanza, Nipomo, and Pozo quadrangles.

KERN, SAN LUIS OBISPO, AND SANTA BARBARA COUNTIES.

In the spring of 1919 L. F. Biggs extended triangulation over the above-named quadrangles, based on stations San Luis and San Jose of the U. S. Coast and Geodetic Survey.

Fifteen stations were located on North American datum.

ALLEN, SAN LUIS OBISPO COUNTY, CALIF.

On north end and highest point of long timbered ridge, just west of the Carrizo ranch.

From Simmler follow road past Carrizo ranch to Buckhorn ranch, thence go southwest by trail up canyon to summit, and continue southwestward to second summit, where point can be seen and approached to the southward. Point can also be reached from Avenal ranch.

Station mark: Bronze tablet in rock under signal.

Signal: Tree and small cairn over tablet.

[Latitude 35° 11′ 07.97″. Longitude 120° 05′ 03.79″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pamasse	24 27 57.53	204 25 36.53	4.1759076	9.317
Stanley	50 37 39.48	230 31 55.01	4.2926926	12.191
Hathaway	88 39 52.24	268 34 39.45	4.1379504	8.537
McChesney	128 01 38.17	307 56 34.97	4.2269035	10.477
Freeborn	194 10 10.82	14 11 14.80	4.0587497	7.114
Las Yeguas	202 17 37.99	22 22 04.74	4.4868705	19.065
Cuyama B	356 48 32.95	176 48 56.78	4.2759012	11.729

CHICHES, SAN LUIS OBISPO COUNTY, CALIF.

On a high brushy peak, 9 miles west of Pozo. From Pozo follow Simmler road 7.0 miles to top of Pozo grade and take road to left 1 mile to Ranger Cabin. A trail leads from Ranger Cabin to station; distance about 4 miles.

Station and signal: A 10-foot tree placed in the ground.

Reference mark: A bronze tablet in rock flush with the ground, distant 1.5 feet from station; azimuth from tablet to station 236°.

[Latitude 35° 23′ 34.30″. Longitude 120° 21′ 05.095″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
San Luis	56 19 25.42	236 12 08.76	4.3603682	14.280
Creston	150 57 55.20	330 54 03.74	4.3158950	13.160
Red Hill	200 57 41.63	21 01 05.47	4.3927193	15.348
Las Yeguas	261 21 39.98	81 35 24.51	4.5598618	22.553
Panza Tree	279 05 26.31	99 08 49.58	3.9529260	5.575
McDonald	279 11 19.99	99 20 16.03	4.3743874	14.714
Freeborn	293 38 20.85	113 48 41.03	4.4709454	18.378
San Jose	318 51 34.49	138 54 26.26	4.0568484	7.083
McChesney	318 52 59.07	138 57 11.08	4.2238956	10.405

CRESTON, SAN LUIS OBISPO COUNTY, CALIF.

On fence line half a mile south of road, on highest point of bare hill, 6 miles east of Creston. From Creston take Shandon road 5 miles to foot of hill, here take right-hand fork and follow past summit one-quarter of a mile westward.

Station mark: A bronze tablet in rock flush with ground under fence and signal.

Signal: A timber structure, on which are cross targets.

[Latitude 35° 33′ 21.28″. Longitude 120° 27′ 43.92″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
San Luis	16 16 52.18	196 13 25.78	4.5065952	19.996
Red Hill	255 11 07.20	75 28 23.49	4.2905877	12.132
Chiches	330 54 03.74	150 57 55.20	4.3158950	13.160

CUYAMA B, SANTA BARBARA COUNTY, CALIF. (Not occupied.)

On a sharp brushy ridge, about 4 miles south of Pamasse ranch house, which is in the Santa Maria Canyon about 25 miles by road east of Santa Maria.

Station and signal: Highest point of hill.

[Latitude 35° 00′ 56.40″. Longitude 120° 04′ 22.35″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McChesney	153 53 18.25	333 47 51.83	4.5126632	20.231
Allen	176 48 56.78	356 48 32.95	4.2759012	11.729
Las Yeguas	192 38 30.52	12 42 32.81	4.6849016	30.078

FREEBORN, SAN LUIS OBISPO COUNTY, CALIF.

On highest point of hill, 6 miles southwest of Simmler. From Cavanaugh & Freeborn ranch skirt hill 1 mile eastward to canyon; follow trail up canyon to pass, thence along ridge to summit. Station can also be approached from south.

Station mark: A bronze tablet set in large rock under signal.

Signal: A 12-foot tree braced to boulder.

[Latitude 35° 17′ 08.15″. Longitude 120° 03′ 12.89″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Allen	14 11 14.80	194 10 10.82	4.0587497	7.114
McChesney	87 28 50.41	267 22 42.78	4.2068429	10.004
Chiches	113 48 41.03	293 38 20.85	4.4709454	18.374
McDonald	155 27 21.51	335 25 56.92	3.9490249	5.526
Las Yeguas	207 05 30.42	27 08 53.32	4.2881364	12.064
Simmler School	216 02 56.42	36 05 58.32	3.9565127	5.622

HATHAWAY, SAN LUIS OBISPO COUNTY, CALIF.

On brush-covered peak, 1 mile south of Pine Mountain and 2 miles north of Hathaway ranch house. From Huasna take road eastward to top of hill three-quarters of a mile east of William Lane's ranch house and half a mile west of Hathaway ranch house. Take left-hand road up hill; continue around hill 1½ miles to east slope of hill, on which are scattering oaks. Station is half a mile west of road.

Station mark: Cross on rock buried flush with ground under signal.

Signal: Live-oak tree 10 feet high, set in ground.

[Latitude 35° 10′ 57.25″. Longitude 120° 14′ 06.64.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Stanley	6 38 44.53	186 38 16.43	4.0867225	7.587
San Luis	109 44 47.56	289 33 29.91	4.4984270	19.578
San Jose	168 13 58.95	348 12 48.04	4.1778311	9.358
McChesney	182 20 04.08	2 20 14.04	4.0300830	6.659
Allen	268 34 39.45	88 39 52.24	4.1379504	8.537

LOMA PALOMA, SAN LUIS OBISPO COUNTY, CALIF. (Not occupied.)

Station is a small leaning tree on small peak in saddle on high bare ridge northeast of Arroyo Grande.

Station mark and signal: A tree.

[Latitude 35° 09′ 54.71″. Longitude 120° 28′ 35.63″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
San Luis	148 26 29.31	328 23 33.72	4.1673568	9.135
San Jose	228 31 23.75	48 38 35.01	4.4013924	15.658
McChesney	240 31 01.71	60 39 32.88	4.4104343	15.988

LAS YEGUAS, KERN COUNTY, CALIF.

On highest point of hill 7 miles north of Simmler and 1½ miles southwest of Las Yeguas ranch house; road passes through saddle one-eighth of a mile north of station.

Station mark: Tablet set in rock flush with ground under signal.

Signal: A timber structure on which are cross targets.

[Latitude 35° 26′ 28.88″. Longitude 119° 57′ 22.32″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cuyama B	12 42 32.81	192 38 30.52	4.6849016	30.078
Simmler School	19 29 29.53	199 28 08.60	4.0241725	6.569
Allen	22 22 04.74	202 17 37.99	4.4868705	19.065
Freeborn	27 08 53.32	207 05 30.42	4.2881364	12.064
McDonald	53 47 39.41	233 42 51.58	4.1916443	9.660
McChesney	54 14 04.13	234 04 32.91	4.48773 6	19.102
San Jose	63 55 01.86	243 44 09.98	4.5005937	19.676
Panza Tree	75 57 59.52	255 47 38.52	4.4453531	17.366
Chiches	81 35 24.51	261 21 39.98	4.5598618	22.553
Red Hill	123 18 10.95	303 07 48.30	4.5089033	20.056

M'CHESNEY, SAN LUIS OBISPO COUNTY, CALIF.

Near U. S. Coast and Geodetic Survey point "Dome."

On a high brushy dome-shaped mountain, 10 miles southeast of Pozo. From Pozo follow the Avenal road 10 miles to Conway's ranch. From Conways follow trail up canyon to eastward, keeping just south of east-west fence; follow this fence about 2 miles to foot of point leading to brushy ridge on which are scattering pine trees; follow trail past pines to top of hill and signal, 4 miles from Conways.

Station mark: A bronze tablet set in large boulder under signal.

Signal: A 12-foot tree braced over tablet.

[Latitude 35° 16′ 44.723″. Longitude 120° 13′ 49.362″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hathaway	2 20 14.04	182 20 04.08	4.0300830	6.659
Stanley	4 38 02.21	184 37 20.12	4.3600442	14.236
Loma Paloma	60 39 32.88	240 31 01.71	4.4104343	15.988
San Luis	89 52 58.66	269 41 30.95	4.4784551	18.698
Chiches	138 57 11.88	318 52 59.07	4.2238956	10.405
San Jose	139 00 11.44	318 58 51.20	3.7281113	3.322
Las Yeguas	234 04 32.91	54 14 04.13	4.4877346	19.102
Freeborn	267 22 42.78	87 28 50.41	4.2068429	10.004
Allen	307 56 34.97	128 01 38.17	4.2269035	10.477
Cuyama B	333 47 51.83	153 53 18.25	4.5126632	20.231
Pamasse	313 31 06.36	163 33 47.94	4.3988740	15.568

M'DONALD, SAN LUIS OBISPO COUNTY, CALIF.

On the south end and at highest point of mesa, 1 mile south of Pozo-Simmler road and 6 miles west of Simmler.

Station mark: Tablet cemented in rock under signal.

Signal: A 10-foot cedar tree braced over station.

[Latitude 35° 21′ 30.61″. Longitude 120° 05′ 39.20″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chiches	99 20 16.03	279 11 19.99	4.3743874	14.714
Las Yeguas	233 42 51.58	53 47 39.41	4.1916443	9.660
Simmler School	274 53 01.24	94 56 27.91	3.9567018	5.624
Freeborn	335 25 56.92	155 27 21.51	3.9490249	5.526

PAMASSE, SANTA BARBARA COUNTY, CALIF.

On a small butte, elevation about 2,500 feet, 1 mile south of Pamasse ranch house, on Santa Maria River, about 25 miles by road from Santa Maria. The ridge increases in height toward the southeast. From Santa Maria follow the Santa Maria River road to point 3 miles beyond where road leaves river to pass the Narrows, to gate with sign-board reading "Santa Barbara National Forest Boundary"; continue one-eighth mile farther to small saddle in which is an iron post marked "A. T. Co. Elev. 1388. Sta. 2234±52", thence go up open ridge 1 mile to signal.

Station mark: Aluminum tablet set in rock on small butte.

Signal is a double oak tree bearing a white cloth, 19 feet distant, azimuth 320° from station.

[Latitude 35° 03′ 45.05″. Longitude 120° 09′ 08.85″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Stanley	97 36 00.76	277 32 37.62	3.9560414	5.616
McChesney	163 33 47.94	343 31 06.36	4.3988740	15.568
Allen	204 25 36.53	24 27 57.53	4.1759076	9.317

PANZA TREE, SAN LUIS OBISPO COUNTY, CALIF. (Not occupied.)

Station is a pine tree on top of hill 4 miles north of La Panza.

Signal and station mark is the tree.

[Latitude 35° 22′ 48.16″. Longitude 120° 15′ 14.07″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chiches	99 08 49.58	279 05 26.31	3.9529260	5.575
Red Hill	180 00 06.62	00 00 06.63	4.3888864	15.214
Las Yeguas	255 47 38.52	75 57 59.52	4.4453531	17.366

RED HILL, SAN LUIS OBISPO COUNTY, CALIF.

On south end of mountain, locally known as Red Hill, 10 miles southeast of Shandon. From Shandon follow road up San Juan River 7 miles to E. A. Hall's ranch house, thence go southward over second-class road to station.

Station mark: A bronze tablet set in rock.

Signal: A cedar tree set in ground 26 feet distant; azimuth from station to signal, 198°.

[Latitude 35° 36′ 02.63″. Longitude 120° 15′ 14.04″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Panza Tree	00 00 06.64	180 00 06.62	4.3888864	15.214
Chiches	21 01 05.47	200 57 41.63	4.3927193	15.348
Creston	75 28 23.49	255 11 07.20	4.2905877	12.132
Las Yeguas	303 07 48.30	123 18 10.95	4.5089033	20.056

SAN JOSE, SAN LUIS OBISPO COUNTY, CALIF.

Described in U. S. Coast and Geodetic Survey Report for 1904, App. No. 9, on page 629, as follows:

"On the top of a peak about 8 miles from the town of San Jose, which is about 30 miles from San Luis Obispo. About 4 miles from San Jose in a canyon is the house of Vidal Garcia. The station is about 4 miles from there by the American Canyon. The station was marked by a concrete pier, a cross on a copper bolt marking the center. Four reference stones were put down, approximately north, south, east, and west, and each 5 feet from the station."

[Latitude 35° 18′ 55.652″. Longitude 120° 16″ 08.225″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Loma Paloma	48 38 35.01	228 31 23.75	4.4013624	15.658
San Luis	81 13 00.12	261 02 52.35	4.4297266	16.714
Chiches	138 54 26.26	318 51 34.49	4.0568484	7.083
Las Yeguas	243 44 09.98	63 55 01.86	4.5005937	19.676
McChesney	318 58 51.20	139 00 11.44	3.7281113	3.322
Hathaway	348 12 48.04	168 13 58.95	4.1778311	9.358

SAN LUIS, SAN LUIS OBISPO COUNTY, CALIF.

Described in U. S. Coast and Geodetic Survey Report for 1904, App. No. 9, page 628, as follows:

"On what is known as the Pine Ridge, in the Santa Lucia or Coast Range, about 6 miles east of San Luis Obispo. This is the highest peak in the vicinity and is covered with pine trees. To reach the station from San Luis Obispo take the main road running toward Arroyo Grande. About 2 miles from the town and just before crossing the first of what are known as the Twin Bridges the peak comes in sight, and can be distinguished by its being somewhat dome-shaped. After crossing the first of these small bridges, turn to the left and continue on to what is known as the Larsen Dairy on the Rancho Corral de Piedra, owned by the Steele Brothers of San Luis Obispo. Follow the creek back of the Larsen Dairy, known as the Canal de Piedra Creek, passing through the place of Patrick McHenry, and about 1½ miles up the creek from the Larsen Dairy take the trail around to the southeast until you arrive at the main ridge and follow this to the top. The station was marked by a concrete pier, with a cross on a copper bolt in the top of the pier marking the center. The reference stones for the station were put approximately north, south, east, and west, each 4 feet from the station."

[Latitude 35° 16′ 41.102″. Longitude 120° 33′ 40.087″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Creston	196 13 25.78	16 16 52.18	4.5065952	19.996
Chiches	236 12 08.76	56 19 25.42	4.3603682	14.280
San Jose	261 02 52.35	81 13 00.12	4.4297266	16.714
McChesney	269 41 30.95	89 52 58.66	4.4784551	18.698
Hathaway	289 33 29.91	109 44 47.55	4.4984278	19.578
Loma Paloma	328 23 33.72	148 26 29.31	4.1673568	9.135

SIMMLER SCHOOL, SAN LUIS OBISPO COUNTY, CALIF. (Not occupied.)

Station is windmill at Simmler schoolhouse.

Station mark: Pipe in ground under windmill.

Signal: The windmill.

[Latitude 35° 21′ 05.46″. Longitude 119° 59′ 42.03″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Freeborn	36 05 58.32	216 02 56.42	3.9565127	5.622
McDonald	94 56 27.91	274 53 01.24	3.9567018	5.624
Las Yeguas	199 28 08.60	19 29 29.53	4.0241725	6.569

STANLEY, SAN LUIS OBISPO COUNTY, CALIF.

On a high brushy hill, locally known as Stanley Mountain, about 16 miles by road northeast of Santa Maria. From Santa Maria, following the road up Alma Creek about 16 miles to Stanley ranch house, which is at foot of hill. Go up hill eastward about 1 mile to top of steep rocky cliff, thence along ridge another mile to highest point and signal.

Station mark: A copper bolt three-eighths by 1½ inches cemented in rock flush with ground under signal.

[Latitude 35° 04′ 23.69″. Longitude 120° 15′ 02.42″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
McChesney	184 37 20.12	4 38 02.21	4.3600442	14.236
Hathaway	186 38 16.43	6 38 44.53	4.0867225	7.587
Allen	230 31 55.01	50 37 39.48	4.2926926	12.191
Pamasse	277 32 37.62	97 36 00.76	3.9560414	5.616

NEVADA.

TRIANGULATION STATIONS.

Coppereid, Dry, Farrell, Lake, Lovelocks, Mazuma, Mill City, and Rochester quadrangles.

CHURCHILL AND HUMBOLDT COUNTIES.

During the season of 1916 L. F. Biggs extended triangulation over parts of the above-named quadrangles. Positions are based on U. S. Coast and Geodetic Survey stations Augusta, Carson Sink, Granite, and North Augusta, on North American datum.

AUGUSTA, CHURCHILL COUNTY, NEV. (Not occupied.)

Elevation of top of peak, 9,979 feet.

[Latitude 39° 32′ 25.167″. Longitude 117° 55′ 07.696″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Carson Sink (Job Peak) (C)	100 05 22.2	279 53 17.8	4.4404349	17.131
Mount Grant (C)	35 18 40.6	214 45 42.8	5.1188124	.....
Pah-Rah (C)	102 27 16.9	281 27 44.1	5.1347074	.....
Mount Callahan (C)	256 56 55.9	77 33 59.8	4.9307815	.....
Toiyabe dome (C)	327 53 19.7	148 14 48.1	4.9662608	.....
Buffalo (B)	166 44 51.34	346 36 47.08	4.8915134	48.402

C=U. S. Coast and Geodetic Survey in 1878. B=L. F. Biggs in 1916.

BLACK KNOB, HUMBOLDT COUNTY, NEV.

On a point locally known as Black Knob, 4.5 miles southwest from Rochester.

Station mark: a bronze tablet.

Signal and reference mark: A bottle neck cemented in solid rock and surmounted by a cairn; distant 3.5 feet, true azimuth, 28° 39′, from station.

[Latitude 40° 14′ 29.229″. Longitude 118° 13′ 14.795″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gypsum	62 18 58.93	242 13 50.56	4.1058191	7.928
Lone Mountain	192 38 39.84	12 39 38.75	3.9923364	6.105
Nenzel Hill	230 31 34.92	50 34 12.09	3.8717149	4.625
Buffalo	284 35 18.05	104 38 52.41	3.9089173	5.038

BUFFALO, HUMBOLDT COUNTY, NEV.

On highest point of Buffalo Peak, 6 miles southeast of Rochester. To reach station follow Packard trail from Rochester to saddle, thence go to left uphill to top of ridge, and along ridge 4 miles.

Station mark: A bronze tablet in solid rock 5–8 feet north of a 1-inch drill hole under signal. True azimuth, 173° 58′.

Signal: A juniper tree in small cairn over drill hole.

[Latitude 40° 13′ 22.885″. Longitude 118° 07′ 42.925″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Carson Sink (Job Peak)	7 19 07.36	187 15 02.20	4.8548881	44.488
Gypsum	78 35 13.60	258 26 31.05	4.2908238	12.139
Trinity	91 22 08.84	270 58 16.61	4.7196737	32.585
Black Knob	104 38 52.41	284 35 18.05	3.9089173	5.038
West Seven Troughs	119 21 36.14	298 54 41.39	4.8282328	41.839
Nenzel Tank	126 58 02.39	306 50 30.91	4.3145316	12.820
Lone Mountain	153 57 49.21	333 55 13.56	4.1122376	8.046
Nenzel Hill	162 49 16.41	342 48 19.11	3.8507749	4.407
Star	173 58 08.12	353 56 31.35	4.5246698	20.798
Granite	251 23 04.28	171 46 28.78	4.7328250	33.587
Cinnabar (west)	256 21 09.70	76 33 16.01	4.4365681	16.979
North Augusta	335 06 41.72	155 19 07.00	4.8176519	40.832
Augusta	346 36 47.08	166 44 51.34	4.8915134	48.402

CARSON SINK, CHURCHILL COUNTY, NEV.

About 20 miles in an easterly direction from town of Stillwater, on highest point of Carson Sink Range of mountains. Station is marked by a copper bolt in a drill hole in solid rock. Also marked a few inches above bolt by a drill hole in a porous rock embedded in the masonry foundation used for mounting the instrument. Station is partly surrounded by a ring wall of rocks about 5.5 meters in diameter. Four drill holes in solid rock are at the following distances and azimuths from station: 5.36 meters, 253° 58′; 5.38 meters, 328° 07′; 3.12 meters, 69° 12′; and 1.99 meters, 163° 42′. Carson Sink latitude-station pier is 22.68 meters from station in azimuth 230° 40′. Vertical-circle station, partly surrounded by a small ring wall of rocks, is 8.13 meters from station in azimuth 39° 15′.

Elevation: Top of surface mark, 8,792.6 feet.

[Latitude 39° 35′ 00.232″. Longitude 118° 14′ 05.093″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mount Callahan (C)	262 20 28.686	83 09 39.391	5.04590205	
Toiyabe Dome (C)	317 16 00.680	137 49 28.718	5.05272206	
Trinity (B)	148 59 53.48	328 40 15.88	4.9255561	52.349
Gypsum (B)	171 26 13.25	251 21 39.24	4.8318167	42.186
Star Peak (B)	183 00 25.80	3 02 55.59	5.0189040	64.901
Buffalo (B)	187 15 02.20	7 19 07.36	4.8548881	44.488
Granite (C)	214 17 32.85	34 44 53.67	5.0290744	66.439
North Augusta (B)	252 42 23.32	72 58 47.40	4.5854878	23.924
Augusta	279 53 17.87	100 05 22.29	4.4404349	17.131

C=U. S. Coast and Geodetic Survey in 1880. B=L. F. Biggs in 1916.

CINNABAR, WEST, HUMBOLDT COUNTY, NEV. (Not occupied.)

Not described.

[Latitude 40° 16′ 50.400″. Longitude 117° 48′ 58.888″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Buffalo	76 33 16.01	256 21 09.70	4.4365681	16.979
Nenzel Hill	90 51 30.79	270 38 26.71	4.4571332	17.803
Star Peak	131 57 05.22	311 43 19.85	4.6053665	25.045

GRANITE PEAK, HUMBOLDT COUNTY, NEV. (Not occupied.)

Elevation of top of peak, 9,779 feet.

[Latitude 40° 22′ 36.653″. Longitude 117° 31′ 31.432″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Diamond Peak (C)	300 31 29.9	121 37 19.5	5.231148	.....
Mount Callahan (C)	326 16 51.7	146 39 04.0	4.948721	.....
Toiyabe Dome (C)	354 59 25.3	175 06 02.4	5.235650	.....
Carson Sink (C)	34 44 53.7	214 17 32.9	5.029074	66.439
Buffalo (B)	71 46 28.78	251 23 04.28	4.7328250	33.587
Nenzel Hill (B)	79 16 17.83	258 51 55.06	4.7351222	33.765
Star Peak (B)	106 42 47.17	286 17 41.42	4.7561888	35.444

C=United States Coast and Geodetic Survey in 1880. B=L. F. Biggs in 1916.

GYPSUM, HUMBOLDT COUNTY, NEV.

On a range of hills about 10 miles east of Lovelock. To reach station go east from Lovelock to old gypsum mine, thence up ridge on right to top of hill. Animals can be taken to station.

Station mark: A bronze tablet in rock at highest point.

Signal: A juniper tree over tablet.

[Latitude 40° 11′ 16.768″. Longitude 118° 21′ 12.412″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Trinity	98 35 57.55	278 20 48.43	4.5272242	20.921
Star Peak	202 40 29.24	22 47 36.67	4.6053736	25.045
Lone Mountain	220 50 08.16	40 56 15.68	4.3124407	12.758
Nenzel Hill	237 53 32.15	58 01 17.75	4.3032412	12.491
Black Knob	242 13 50.56	62 18 58.93	4.1058191	7.928
Buffalo	258 26 31.05	78 35 13.60	4.2908238	12.139
Carson Sink	251 21 39.24	171 26 13.25	4.8318167	42.186

LONE MOUNTAIN, HUMBOLDT COUNTY, NEV.

On highest point of hill west of Limerick Canyon, 3.5 miles west of Rochester.

Station mark: A bronze tablet.

Signal and reference mark: A drill hole surmounted by a cairn 8 feet high, distant 3.2 feet, true azimuth 221°, from station.

[Latitude 40° 19′ 40.035″. Longitude 118° 11′ 43.692″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Black Knob	12 39 38.75	192 38 39.84	3.9923364	6.105
Gypsum	40 56 15.68	220 50 08.16	4.3124407	12.758
Nenzel Tank	94 02 44.34	273 57 48.20	4.0345421	6.728
Nenzel Hill	323 30 21.21	143 31 59.59	3.7811116	3.754
Buffalo	333 55 13.56	153 57 49.21	4.1122376	8.046

NENZEL HILL, HUMBOLDT COUNTY, NEV.

On Nenzel Hill just east of Rochester.

Station mark: A bronze tablet.

Signal: A power pole with targets, distant 23 feet, 283° 01′ true azimuth, from station.

Reference marks: Section corner, distant, 280 feet; true azimuth, 314° 24′; Rochester mines corner No. 2, distant, 108.8 feet; true azimuth, 71° 03′ 30″. The latter is a round piece of steel 1 inch in diameter, projecting 5 inches above rock in which it is cemented. There is an octagonal steel bar projecting 1.6 feet above surface, cemented in rock 0.9 foot east of round bar.

[Latitude 40° 17′ 02.554″. Longitude 118° 09′ 11.598″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Black Knob	50 34 12.09	230 31 34.92	3.8717149	4.625
Gypsum	58 01 17.75	237 53 32.15	4.3032412	12.491
Trinity	83 43 20.82	263 20 25.00	4.7044404	31.462
Nenzel Tank	111 21 24.57	291 14 50.17	4.1889881	9.601
West Seven Troughs	114 51 31.36	294 25 33.07	4.7950248	38.759
Lone Mountain	143 31 59.59	323 30 21.21	3.7811116	3.754
Star Peak	176 54 48.91	356 54 09.55	4.4240360	16.496
Granite	258 51 55.06	79 16 17.83	4.7351222	33.765
Cinnabar (west)	270 38 26.71	90 51 30.79	4.4571332	17.803
Buffalo	342 48 19.11	162 49 16.41	3.8507749	4.407

NENZEL TANK, HUMBOLDT COUNTY, NEV. (Not occupied.)

Not described.

[Latitude 40° 20′ 04.550″. Longitude 118° 19′ 21.260″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Star Peak	211 43 04.35	31 49 00.34	4.3905471	15.272
Lone Mountain	273 57 48.20	94 02 44.34	4.0345421	6.728
Nenzel Hill	291 14 50.17	111 21 24.57	4.1889881	9.601
Buffalo	306 50 30.91	126 58 02.39	4.3145316	12.820

NORTH AUGUSTA, HUMBOLDT COUNTY, NEV. (Not occupied.)

No description.

[Latitude 39° 41′ 08.510″. Longitude 117° 48′ 22.386″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mount Callahan (C)	267 38 45.7	88 11 34.1	4.866121	.....
Toiyabe Dome (C)	337 22 39.1	157 39 53.0	5.010504	.....
Carson Sink (C)	72 58 47.4	252 42 23.3	4.585488	23.924
Buffalo (B)	155 19 07.00	335 06 41.72	4.8176519	40.832

C=U. S. Coast and Geodetic Survey in 1880. B=L. F. Biggs in 1916.

STAR PEAK, HUMBOLDT COUNTY, NEV.

On highest point of Star Peak.

Station mark: A tablet set in rock under monument built over same place at which an old monument was found.

Signal: Center of monument over tablet.

Elevation of top of peak, 9,835 feet.

[Latitude 40° 31′ 22.011″. Longitude 118° 10′ 12.323″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mount Callahan (C)	310 33 56.9	131 21 06.7	5.138977	.....
Toiyabe Dome (C)	339 14 06.9	159 45 26.5	5.301670	.....
Carson Sink (C)	3 02 55.7	183 00 25.8	5.018904	64.901
Gypsum (B)	22 47 36.67	202 40 29.24	4.6053736	25.045
Nenzel Tank (B)	31 49 00.34	211 43 04.35	4.3905471	15.272
Trinity (B)	56 45 05.26	236 22 45.39	4.7669007	36.329
West Seven Troughs (B)	89 41 28.04	269 16 05.40	4.7416937	34.280
Granite (C)	286 17 41.42	106 42 47.17	4.7561888	35.444
Cinnabar, west (B)	311 43 19.85	131 57 05.22	4.6053665	25.045
Buffalo (B)	353 56 31.35	173 58 08.12	4.5246698	20.798
Nenzel Hill (B)	356 54 09.55	176 54 48.91	4.4240360	16.496

C=U. S. Coast and Geodetic Survey in 1879. B=L. F. Biggs in 1916.

TRINITY, HUMBOLDT COUNTY, NEV.

On the highest part of a black volcanic mountain about 15 miles west of Lovelocks. Top of hill is about 100 feet long north and south, and station is on south end. To reach station follow Seven Troughs road from Lovelocks about 6 miles to a dim road leading west. Seven Troughs road passes through a saddle 4 miles northeast of point.

Station mark: A bronze tablet 7 feet west of signal cairn.

Signal: A cairn 8 feet high.

[Latitude 40° 13′ 57.608″. Longitude 118° 44′ 40.599″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Star	236 22 45.39	56 45 05.26	4.7669007	36.329
Nenzel Hill	263 20 25.00	83 43 20.82	4.7044404	31.462
Buffalo	270 58 16.61	91 22 08.84	4.7196737	32.585
Gypsum	278 20 48.43	98 35 57.55	4.5272242	20.921
Carson Sink (Job Peak)	328 40 15.88	148 59 53.48	4.9255561	52.349

WEST SEVEN TROUGHS, HUMBOLDT COUNTY, NEV. (Not occupied.)

Not described.

[Latitude 40° 31′ 05.767″. Longitude 118° 49′ 15.847″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Star Peak	269 16 05.40	89 41 28.04	4.7416937	34.280
Nenzel Hill	294 25 33.07	114 51 31.36	4.7950248	38.759
Buffalo	298 54 41.39	119 21 36.14	4.8282328	41.839

TRINITY, HUMBOLDT COUNTY, NEV.

On the highest part of a black volcanic mountain about 15 miles west of Lovelocke. Top of hill is about 100 feet long north and south, and station is on south end. To reach station follow Seven Troughs road from Lovelocke about 6 miles to a dim road leading west. Seven Troughs road passes through a saddle 4 miles northeast of point.

Station mark: A bronze tablet 7 feet west of signal cairn.

Signal: A cairn 8 feet high.

[Latitude 40° 19′ 57.306″. Longitude 118° 41′ 10.309″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	Log. reduced.	Miles.
Star	238 29 42.39	58 42 49.38	4.7000007	39.879
Normal Hill	261 20 26.09	82 43 20.42	4.7001404	31.802
Buffalo	270 38 16.01	91 22 06.44	4.7128787	32.765
Olympus	275 20 46.49	96 26 06.55	4.7272813	30.931
Carson Sink (Job Peak)	325 40 12.85	145 39 54.13	4.9253091	52.349

WEST SEVEN TROUGHS, HUMBOLDT COUNTY, NEV. (Not occupied.)

Not described.

[Latitude 40° 11′ 05.76″. Longitude 118° 49′ 13.81″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	Log. reduced.	Miles.
Star Peak	239 10 05.40	59 41 29.06	4.7149027	34.290
Normal Hill	294 20 32.07	114 51 31.36	4.7280948	26.789
Buffalo	299 01 41.39	119 21 36.14	4.8923258	41.859

STAR PEAK, HUMBOLDT COUNTY, NEV.

On highest point of Star Peak.

Station mark: A tablet set in rock pillar monument built over same place at which [illegible] monument was found.

Signal: Center of monument over tablet.

Elevation of top of peak, 9,855 feet.

[Latitude 40° 11′ 05.76″. Longitude 118° 49′ 13.81″.]

SOUTH CAROLINA.

PRIMARY TRAVERSE.

Aiken, Allendale, Augusta, Awensdaw, Bamberg, Batesburg, Bishopville, Bonneau, Bowman, Bulls Island, Calibogue Sound, Camp Jackson Artillery Field, Chapin, Charleston, Chicora, Clarks Hill, Conway, Cordesville, Cottageville, Cummings, Edgefield, Edisto Island, Edmund, Ellenton, Elliot, Elloree, Eutawville, Fort Motte, Georgetown, Green Pond, Greens Cut, Guide, Hagood, Hardeeville, Hopkins, Hyman, Indiantown, James Island, Kingstree, Lexington, Lodge, Loris, Manning, Marion, Mayesville, Myrtle Beach, Nichols, Nixonville, Oakton, Okatie, Olar, Orangeburg, Parksville, Peeples, Pineland, Prosperity, Ravenels, Rhems, Ridgeville, Rimini, St. George, St. Matthews, Saluda, Santee, Savannah, Scranton, Seivern, Shirley, Summerville, Sumter, Talatha, Timmonsville, Trio, Varnville, Wadmelaw Island, Walterboro, Wampee, Warrenville, Waverly Mills, Williston, Woodford, Yauhannah, and Yemassee quadrangles.

AIKEN, BAMBERG, BARNWELL, BEAUFORT, BERKELEY, CALHOUN, CHARLESTON, CLARENDON, COLLETON, DORCHESTER, EDGEFIELD, FLORENCE, GEORGETOWN, HAMPTON, HORRY, JASPER, LEXINGTON, ORANGEBURG, SUMTER, AND WILLIAMSBURG COUNTIES.

Credit for the work is given at the head of each quadrangle list.

For additional geographic positions in South Carolina see U. S. Geological Survey Bulletins Nos. 181, 276, and 310. The U. S. Coast and Geodetic Survey has many unpublished data.

AIKEN QUADRANGLE.

Along Southern Ry. near west border of quadrangle. (By B. H. Yoakum in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost 15, railroad track opposite	33	39	48.0	81	44	08.0	
Milepost 16, road crossing near	33	39	34.7	81	43	14.2	4,743
Trestle A. B. 16.2, north end of	33	39	16.7	81	43	01.7	2,107
Lakeview, railroad track, opposite station sign	33	38	57.2	81	42	49.5	2,230
Milepost 18, railroad track opposite	33	37	55.6	81	42	27.1	6,507
Croft, 350 feet northwest of station, 50 feet east of wagon road, 18 feet north of railroad; iron post stamped "Prim. Trav. Sta. No. 5, 1918 Y"	33	37	20.7	81	42	05.7	3,961
Trestle A. B. 19.5, north end of	33	36	52.2	81	41	46.1	3,329
Milepost 20, railroad track opposite	33	36	24.4	81	41	57.2	2,966
Pine Ridge, railroad track, opposite signboard	33	35	26.2	81	42	22.5	6,260
Milepost 22, railroad track opposite	33	34	45.4	81	42	20.6	4,120
Aiken, road crossing 1 mile north of	33	34	14.7	81	42	32.9	3,273
Aiken, railroad track, opposite milepost 23	33	33	56.6	81	42	43.9	2,055
Aiken, iron post 96, 1917 Mac	33	33	17.6	81	42	34.0	4,025
Aiken, corner of South Boundary Avenue and Chesterfield Street	33	33	16.0	81	43	17.5	3,683
James Weatherford's residence, road forks at	33	31	49.4	81	43	25.9	8,774
Millbrook Church, crossroads 500 feet west of	33	31	25.2	81	43	11.2	2,737
Aiken, 4 miles south of, 1.5 miles southeast of Millbrook Church on Whiskey Road, 20 feet south of crossroads; iron post stamped "Prim. Trav. Sta. No. 14, 1918 Y"	33	30	03.4	81	42	22.3	9,250

AIKEN QUADRANGLE—Continued.

Along highway near north border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Tenant house owned by C. B. Gunner, T road east at	33	44	18.0	81	30	55.6	.....
Jones crossroads, 1 mile southwest of	33	44	59.7	81	33	19.6	.....
George Stack's gin, T road at	33	44	33.9	81	33	41.0	3,167
Merrit's bridge, crossroads 1,600 feet northeast of	33	42	46.4	81	34	12.0	11,170
Crossroads at mail box, 275 feet east of another crossroad	33	42	43.0	81	34	45.9	2,888
Road forks at mail box	33	42	38.0	81	35	13.8	2,404
Tenant house occupied by Eliza Belle, road opposite	33	42	51.8	81	35	56.8	3,897
Sawmill owned by Henry Jordan, bridge over mill race	33	43	03.7	81	36	27.4	2,850
Road fork, in horseshoe bend of road	33	43	51.3	81	36	57.7	5,451
W. B. Saunders's mail box, road forks 300 feet southeast of	33	44	29.3	81	38	04.2	6,798
Ergle's bridge, 2 miles northeast of, 600 feet north of house owned by C. B. La Fitte, 40 feet northwest of crossroads; iron post stamped "Prim. Trav. Sta. No. 13, 1918 Y"	33	44	54.7	81	38	36.8	3,763
Mr. Gregory's house, crossroads at	33	44	32.9	81	42	24.4	.....
Long Branch negro school, forks of road 500 feet west of	33	44	10.0	81	43	13.0	4,711
Richard Riplin's house, crossroads 500 feet north of	33	43	01.5	81	44	00.0	7,990
Eureka, about 2 miles northeast of, T road east, 50 feet north of T road west	33	42	49.2	81	44	53.1	4,660

Along Southern Ry. near south border of quadrangle. (By E. L. McNair in 1918.)

Apia spur, road crossing at switch stand	33	30	01.2	81	32	03.6	.....
Milepost 47, center of track opposite	33	30	14.8	81	32	30.9	2,696
Intersection of tangents	33	30	34.8	81	33	29.2	5,329
Road crossing	33	30	46.9	81	34	21.4	4,590
Oakwood station, road crossing at	33	30	58.5	81	35	11.8	4,422
Road crossing	33	31	09.4	81	35	58.8	4,131
Road crossing	33	31	16.5	81	36	29.9	2,723
Road crossing	33	31	24.7	81	37	05.1	3,096
Montmorenci station, 160 feet northwest of, 60 feet north of center of track, near fence corner; iron post stamped "Prim. Trav. Sta. No. 95, 1918 Mac." Azimuth to switch stand, 288° 45′ 15″	33	31	39.5	81	38	05.7	5,330
Road crossing	33	32	05.1	81	38	53.2	4,795
Milepost 54, center of track opposite	33	32	16.4	81	39	20.3	2,558
Road crossing at old store	33	32	31.7	81	40	11.0	4,564
Road crossing	33	32	38.5	81	40	33.4	2,015
Road crossing	33	32	46.1	81	40	58.3	2,245
Road crossing	33	33	03.1	81	41	49.6	4,671
Aiken freight station, 125 feet west of, 25 feet southeast from center of track running to 90 feet southwest from street crossing; iron post stamped "Prim. Trav. Sta. No. 96, 1918 Mac." Azimuth to Catholic Church spire, 109° 39′ 30″	33	33	17.6	81	42	34.0	4,033
Street crossing, overhead	33	33	27.0	81	43	28.0	4,663
Road crossing	33	33	30.7	81	44	50.6	7,005

Along highways through center of quadrangle. (By B. H. Yoakum in 1918.)

Shaw's Creek, center of bridge over	33	39	32.8	81	43	05.4	.....
Crossroads, 120 feet west of, on south side, 3-inch iron pipe	33	39	35.5	81	42	49.7	1,357
Shiloh Church, 200 feet north of, T road south	33	39	30.5	81	42	20.8	2,492
Crossroads	33	39	32.4	81	42	03.0	1,505
Road forks	33	40	03.9	81	40	28.7	8,589
Road forks	33	40	21.1	81	39	39.2	4,533
Crossroads	33	40	39.5	81	38	45.9	4,871
Road forks	33	40	56.6	81	37	42.2	5,652
Crossroads	33	40	59.7	81	37	13.0	2,485
Merrit's bridge, 0.4 mile southwest of, road forks	33	41	04.8	81	36	31.5	3,539
Merrit's bridge, east end of	33	41	10.8	81	36	11.0	1,831
Crossroads, 200 feet north of L. H. Fox's residence	33	41	04.4	81	35	38.8	2,803
Aaron Moore's residence, in front of, on north side of road, in root of red-oak tree; copper nail and washer	33	40	28.0	81	34	45.0	5,842
Earle post office, 0.25 mile northeast of, 46 feet south of mail box No. 79, in angle between road forks; iron post stamped "Prim. Trav. Sta. No. 10, 1918 Y"	33	39	27.6	81	33	58.9	7,248
W. W. Coleman's cotton gin and sawmill, road forks at	33	39	05.3	81	33	49.3	2,386
Crossroads	33	38	51.1	81	33	28.0	2,298
New Holland road, center of, T road south, 330 feet west is T road north	33	38	37.5	81	32	52.5	3,300
T road north	33	38	12.9	81	32	40.1	2,697
B. K. Boyston's residence, in front of, on north side of road, at foot of gum tree	33	38	32.0	81	31	35.9	5,765
Sam Anderson's residence, 500 feet west of, crossroads	33	38	41.1	81	30	40.4	4,778

AIKEN QUADRANGLE—Continued.

Along highways near east border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossroads	33	31	15.8	81	30	01.9	.....
Crossroads	33	30	34.7	81	30	18.6	4,381
Crossroads	33	30	04.7	81	30	38.9	3,486

Magnetic declination through center of quadrangle, 0° 35′ E.; for east border of quadrangle, 0° 29′ E.

Near southeast corner of quadrangle. (By G. T. Hawkins in 1918.)

Forks of road northwest	33	30	16.5	81	30	29.3	.....
Crossroads, 20 feet southwest to mail box	33	30	57.4	81	30	17.3	4,265
Northwest corner of crossroads; iron post stamped "Elev. 385 feet"	33	31	15.9	81	30	02.0	2,268

Northwest across northeast corner of quadrangle. (By E. L. McNair in 1919.)

T road easterly	33	44	18.1	81	30	55.7	.....
Road forks, 700 feet south of schoolhouse	33	44	49.5	81	31	21.4	3,848

ALLENDALE QUADRANGLE.

Along Charleston & Western Carolina Ry. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing at milepost 53	33	00	19.7	81	18	15.5	.....
Allendale longitude station (U. S. Coast and Geodetic Survey), 11.09 meters south and 0.32 meter east of latitude station, 21.50 meters distant from brick pier which forms the northeast support of church, 16.72 meters distant from large double pine tree, which has 5 nails driven in the southeast face; concrete pier about 19 by 34 by 60 inches, projecting 3 feet above surface of ground, with drill hole in top marking center; top is marked "U. S. C. & G. S. '07"	33	00	31.12	81	18	40.65	2,432

Only one observation for magnetic declination, 0° 22′ E.

Southwest along Atlantic Coast Line R. R. (By E. L. McNair in 1918.)

Crossing of Southern Ry. under Atlantic Coast Line R. R.	33	14	18.8	81	21	13.6	.....
Barnwell station, opposite and across track from east end of, on bank about 3 feet higher than track; iron post stamped "Prim. Trav. Sta. No. 102, 1918 Mac;" azimuth to city water tower, 211° 35′ 20″; to flag on public school, 217° 50′ 20″	33	14	15.5	81	21	31.6	1,565
Second-class road crossing	33	14	02.3	81	22	57.8	7,445
Creek crossing, 600 feet west of water tank, in center of stream	33	13	55.0	81	23	44.1	4,005
Public-road crossing	33	13	55.5	81	24	23.2	3,319
Second-class road crossing	33	14	02.0	81	24	42.8	1,785
Road crossing	33	14	09.0	81	25	41.4	5,029
Road crossing	33	14	11.0	81	26	20.9	3,365
Snelling station, across track from and about east of, 30 feet west of milepost 84; iron post stamped "Prim. Trav. Sta. No. 103, 1918 Mac"	33	14	21.3	81	27	17.5	4,919
Road crossing	33	14	26.7	81	27	40.2	2,007
Milepost 85	33	14	20.9	81	28	18.0	3,257
Road crossing	33	13	54.3	81	29	15.7	5,592
Road crossing	33	13	31.5	81	29	48.4	3,617

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ALLENDALE QUADRANGLE—Continued.

Southeast along Charleston & Western Carolina Ry.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Public-road crossing	33	04	18.8	81	29	42.9	.....
Martin's station, public-road crossing	33	04	07.3	81	28	34.2	5,962
Farm-road crossing	33	04	36.7	81	27	04.6	8,185
Center of trestle bridge over creek	33	04	54.7	81	26	30.0	3,457
Beldoc station, about 150 feet southeast of, 20 feet south by 25 feet east of road crossing; iron post stamped "Prim. Trav. Sta. No. 100, 1918 Mac"; azimuth to center pole on top of water tank, 292° 43′ 40″	33	04	45.2	81	25	19.9	6,042
Beldoc, U. S. Coast and Geodetic Survey traverse station, first curve south of Beldoc station, 28 feet from center of track, on edge of swamp; nail in pine stub	33	04	39.61	81	25	03.27	1,526
Road crossing	33	04	10.5	81	24	21.1	4,640
Farm-road crossing	33	04	05.6	81	23	44.4	3,154
Road crossing, 550 feet north of switch stand at spur	33	03	56.1	81	23	11.2	2,987
Road crossing	33	02	52.9	81	22	11.7	8,151
Appleton, public-road crossing, center line of road southwest	33	02	36.5	81	21	46.9	2,680
Road crossing	33	02	05.8	81	21	00.7	5,010
Curve A (U. S. C. & G. S.), intersection of tangents	33	01	48.29	81	20	34.27	2,860
Milepost 51	33	01	22.8	81	19	53.5	4,325
Public-road crossing	33	00	51.3	81	19	03.0	5,355
Allendale, U. S. Coast and Geodetic Survey traverse station, at first curve north of railroad station, at end of 36-mile tangent from Yemassee (curve is so slight that station falls 2 feet outside of rail); a 2-foot draintile set in cement, with nail marking center. It is about 8 inches below surface and right at end of ties	33	00	40.13	81	18	44.93	1,911
Allendale, 200 feet north of railroad station, 21 feet west and 17 feet south of crossing of Southern Ry. and Charleston & Western Carolina Ry., on bank about 2.5 feet above track; iron post not stamped. Azimuth to spire of Happy Home Baptist Church (colored), 145° 20′ 15″	33	00	30.5	81	18	31.6	1,497

Northwest along Southern Ry. near center of quadrangle. (By H. S. Senseney in 1918.)

Allendale; iron post marked "Mac," not stamped	33	00	30.5	81	18	31.6	.....
Road crossing	33	01	15.4	81	18	41.4	4,613
Road crossing	33	01	55.4	81	18	53.2	4,170
Road crossing	33	02	22.3	81	19	01.0	2,800
Seigling, road crossing at station	33	02	41.9	81	19	06.8	2,040
Road crossing	33	03	21.0	81	19	18.3	4,075
Road crossing 175 feet north of milepost 183	33	03	45.9	81	19	25.6	2,585
Road crossing	33	04	13.3	81	19	33.7	2,855
Mathis, road crossing	33	04	44.0	81	19	42.7	3,195
Cave, road crossing at	33	05	36.1	81	19	58.0	5,425
Road crossing	33	06	25.2	81	20	12.4	5,115
Road crossing	33	06	52.9	81	20	20.6	2,885
Kline, road crossing	33	07	27.1	81	20	30.6	3,555
Kline, 750 feet north of station, 65 feet east of railroad crossing, 10 feet south of east and west road, azimuth to northeast corner of red-brick schoolhouse is 295° 38′ 20″; iron post stamped "Prim. Trav. Sta. No. 11 S, 1918"	33	07	34.5	81	20	31.9	757
Road crossing	33	08	00.0	81	20	40.3	2,676
Road crossing	33	08	20.9	81	20	46.5	2,180
Road crossing	33	08	40.8	81	20	52.3	2,070
Road crossing	33	09	06.9	81	21	00.0	2,720
Road crossing	33	09	42.3	81	21	04.1	3.593
Road crossing	33	09	58.8	81	21	02.8	1,670
Road crossing	33	10	36.1	81	20	59.9	3,780
Yenome, road crossing	33	10	56.8	81	20	58.2	2,095
Road crossing	33	11	34.3	81	20	56.9	3,795
Road crossing	33	11	59.8	81	20	03.7	2,648
Salkehatchie River, north end of trestle over	33	12	31.0	81	21	12.4	3,240
Road crossing	33	12	55.5	81	21	14.0	2,477
Road crossing	33	13	15.4	81	21	13.9	2,015
Road crossing	33	13	37.6	81	21	13.8	2,240
Road crossing	33	14	03.2	81	21	13.7	2,585
Barnwell, crossing of Southern Ry. over Atlantic Coast Line R.R.	33	14	18.6	81	21	13.6	1,560
Barnwell, Prim. Trav. Sta. No. 102, 1917 Mac. (previously described)	33	14	15.5	81	21	31.6	1,562

ALLENDALE QUADRANGLE—Continued.

East along highways through center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Kline, 750 feet north of station; iron post stamped "Prim. Trav. Sta. No. 11 S, 1918"	33 07 34.5	81 20 31.9	.....
Road forks	33 07 44.9	81 19 52.1	3,550
Second-class T road south	33 08 00.9	81 19 12.7	3,720
Second-class T road south	33 08 12.1	81 18 30.4	3,774
Road fork	33 08 12.8	81 18 07.5	1,946
T road west	33 08 36.5	81 17 53.8	2,662
Crossroads	33 08 31.5	81 17 40.8	1,218
T road north	33 08 35.0	81 17 14.0	2,307
T road northeast	33 08 31.5	81 16 32.2	3,575
Big Forks School, road fork	33 08 54.0	81 15 58.5	3,659
Crossroads	33 08 32.7	81 15 20.9	3,854

Northwest along highways near center of quadrangle.

Kline, Prim. Trav. Sta. No. 11 S	33 07 34.5	81 20 31.9	.....
Road forks	33 08 28.2	81 21 04.4	6,094
Second-class T road south	33 08 34.5	81 21 50.3	3,953
Second-class T road south	33 08 55.7	81 22 37.4	4,547
Crossroads	33 09 16.8	81 23 21.7	4,327
Crossroads	33 09 23.5	81 24 03.7	3,638
Second-class T road south	33 09 31.4	81 24 34.0	2,695
Crossroads	33 09 46.7	81 25 44.7	6,206
Crossroads	33 09 55.5	81 26 24.5	3,502
Road fork	33 09 59.5	81 26 43.9	1,695
Road fork	33 10 22.0	81 27 03.8	2,831
Road fork	33 10 35.6	81 27 30.1	2,628
Crossroads	33 10 40.6	81 27 53.1	2,018

South near west border of quadrangle.

Road fork	33 10 36.8	81 28 43.4	4,289
Road fork	33 10 26.3	81 28 58.6	1,691
T road east	33 09 54.3	81 29 12.3	3,445
Salem Church, T road west	33 08 34.7	81 29 33.3	8,240
Martin, 5.5 miles north of, 0.35 mile south of Salem Church, 12 feet north and 15 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 10 S, 1918"	33 08 16.8	81 29 39.1	1,870
Road fork	33 07 57.4	81 29 42.0	1,979
Road fork, at sign, "Millets 3 miles"	33 07 11.0	81 29 53.1	4,786
T road west	33 06 28.2	81 29 31.2	4,715
Crossroads, west of Three Runs Church	33 05 39.9	81 29 28.8	4,884
Lane northeast to house	33 05 18.4	81 29 12.4	2,585
Road fork	33 04 51.2	81 28 41.8	3,744
Road fork	33 04 34.0	81 28 42.1	1,734
North end of bridge over Lower Three Runs Creek	33 04 23.7	81 28 37.3	1,123
Station 1497=Station 1157	33 04 07.3	81 28 34.2	1,674

North along highways near west border of quadrangle.

Road fork	33 10 36.8	81 28 43.4	.....
Crossroads	33 11 26.0	81 28 04.0	5,986
Crossroads	33 11 48.8	81 27 56.8	2,396
Crossroads	33 12 27.2	81 27 45.0	4,012
Crossroads	33 12 36.4	81 27 41.5	977
Road fork, east of south end of pond	33 13 06.4	81 27 28.2	3,239
Crossroads	33 14 00.2	81 27 35.1	5,464
Snelling, Prim. Trav. Sta. No. 102, 1917 Mac	33 14 21.3	81 27 17.5	2,609

Magnetic declination for west border of quadrangle, 0.5° E.; for center of quadrangle, 0.6° W.

North along highways near east border of quadrangle. **(By H. S. Senseney in 1918.)**

Road forks at Big Forks School	33 08 54.0	81 15 58.5	.....
Crossroads	33 09 31.8	81 15 28.8	4,586
North end of bridge over Salkehatchie River	33 10 08.6	81 15 36.3	3,768

ALLENDALE QUADRANGLE—Continued.

North along highways near east border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road forks	33 10 33.6	81 15 25.8	2,684
Road fork at blazed pine tree on north side of road	33 10 49.8	81 15 10.7	2,085
T road north	33 13 06.2	81 15 24.1	.....
Crossroads	33 13 11.8	81 15 57.3	2,879
Road fork	33 13 42.8	81 15 51.0	3,179
Crossroads, south of creek	33 14 03.8	81 15 32.2	2,652

Magnetic declination along east border of quadrangle, 0.9° W.

West along highways near south border of quadrangle. (By H. S. Senseney in 1918.)

Allendale, iron post not stamped	33 00 30.5	81 18 31.6	.....
Crossroads	33 00 25.6	81 19 10.3	3,332
Road forks	33 00 17.0	81 19 41.8	2,820
Road forks at negro cabin	33 00 15.8	81 19 53.9	1,040
Crossroads	33 00 11.2	81 22 58.3	.....
Road forks	33 00 17.9	81 23 32.6	3,005
Crossroads	33 00 26.5	81 24 00.6	2,539
Road forks	33 00 05.1	81 24 33.5	3,533
Crossroads	33 00 13.5	81 25 13.6	3,520
Road forks at blazed pine tree	33 00 30.8	81 25 50.2	3,574
Crossroads	33 00 29.3	81 26 21.0	2,635
Crossroads	33 00 29.1	81 26 37.0	1,360
Crossroads at mail boxes 43 and 44	33 00 37.3	81 27 13.8	3,241
Crossroads	33 00 29.9	81 27 42.2	2,535
Martin, 4 miles south of and about 1 mile east of White Womans Point, 15 feet north and 15 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 9 S., 1918." Azimuth to head of nail in blaze on tree 305 feet north of post and on east side of road is 172° 23′ 15″	33 00 29.5	81 28 47.6	5,573
Crossroads	33 01 05.1	81 28 48.5	3,590
Road forks at blazed pine tree	33 01 26.5	81 28 52.5	2,196
Road forks at blazed pine tree	33 01 42.2	81 29 01.3	1,753
Second-class T road east	33 02 17.5	81 29 02.9	3,568
Crossroads at blazed pine tree	33 02 48.0	81 29 01.1	3,088
Second-class T road east	33 03 22.0	81 28 54.9	3,474
Martin, south end of, road fork	33 03 51.6	81 28 37.2	3,353
Martin, railroad crossing	33 04 07.3	81 28 34.2	1,608

Mean magnetic declination along north border of quadrangle, 0.3° W.

Near southwest corner of quadrangle.

T road west	33 00 19.2	81 28 42.1	.....
Prim. Trav. Sta. No. 9 S (previously described)	33 00 29.5	81 28 47.6	1,130
White Womans Landing, Army bench mark No. 24, on checked spur line. Azimuth to head of nail in triangular blaze on cypress tree is 171° 54′ 05″	33 00 33.8	81 29 28.2	3,476

Near northwest corner of quadrangle. (By B. H. Yoakum in 1918.)

T road southwest	33 14 49.2	81 28 44.5	.....
Crossroads	33 14 32.6	81 27 41.1	5,632

AUGUSTA QUADRANGLE.

Southeast along Southern Ry. (By E. L. McNair in 1918.)

Beech Island triangulation station (U. S. C. & G. S.), about 1 mile south of Beech Island railroad station, on slight rise 15 feet above track, about 100 feet from where track passes station; on land of Maj. W. W. Woolsey of Aiken, S. C., on narrow strip between railroad and a cotton field, 400 meters from section house on opposite side of track. Station mark: A 6-inch drain tile filled with cement in which is a spike which marks the center of station, marked "U. S. C. & G. S. 1901"	° ′ ″ 33 23 41.27	° ′ ″ 81 53 22.58	.....
Road crossing	33 23 32.9	81 53 16.1	1,007
Twiggs Spur, 135 feet north of switch stand, road crossing	33 23 10.2	81 52 55.1	2,907
Private-road crossing	33 22 40.0	81 52 28.5	3,800
Trestle over small stream	33 22 17.3	81 52 08.5	2,845
Road crossing	33 21 57.8	81 51 51.2	2,460

AUGUSTA QUADRANGLE—Continued.

Southeast along Southern Ry.—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Brown's flag station, 400 feet north of, road crossing	33	21	27.4	81	51	24.4	3,820
Kathwood siding, switch stand at north end of	33	20	55.6	81	50	56.4	4,000
Kathwood flag station, road crossing	33	20	36.8	81	50	39.8	2,365
Hankinson flag station, road crossing	33	19	49.8	81	49	58.3	5,910
Road crossing	33	18	53.3	81	49	08.4	7,115
Jackson station, 400 feet N. 35° W. of, 35 feet north and 20 feet east of public-road crossing, 35 feet northeast of center of main track; iron post stamped "Prim. Trav. Sta. No. 97, 1917 Mac." Azimuth to semaphore post in front of station is 139° 57′ 15″	33	18	22.2	81	48	40.5	3,933
Jackson siding, switch stand at south end of	33	18	07.4	81	48	28.0	1,836
Road crossing near water tank	33	17	14.0	81	47	40.8	6,720
Second-class road crossing	33	16	33.8	81	47	05.4	5,050
Second-class road crossing	33	15	55.6	81	46	31.7	4,815
Bush flag station, road crossing	33	15	11.5	81	45	52.9	5,545
Northeast along Southern Ry. (By B. H. Yoakum in 1918.)							
Augusta, old post office building, U. S. Coast and Geodetic Survey triangulation station	33	28	25.52	81	58	08.00	.....
Augusta, Southern Ry., at center of Green Street crossing, west rail joint	33	28	19.1	81	57	45.7	1,997
Aiken highway crossing	33	28	54.5	81	57	01.7	5,168
Hamburg station, opposite semaphore, center of main track	33	28	46.7	81	56	44.2	1,700
Hamburg, 1 mile east of, opposite "Station 1 mile" sign, center of track	33	28	28.6	81	55	46.2	5,250
Hamburg, 2 miles east of, at road crossing, center of track	33	28	28.2	81	55	00.2	3,894
Horse Creek station, 1 mile west of, opposite "1 mile" post, center of track	33	28	52.3	81	54	32.6	3,373
Horse Creek station, 1,465 feet west of, road crossing	33	29	15.2	81	53	56.6	3,829
Along highways through center of quadrangle. (By B. H. Yoakum in 1918.)							
Road forks, 350 feet west of Zion Hill Church	33	24	11.0	81	45	34.1	.....
Talatha, 6 miles west of, 550 feet southeast of bridge over Holley Creek, in northwest angle of triangle formed by road forks; iron post stamped "Prim. Trav. Sta. No. 16, 1918 Y"	33	24	22.7	81	47	01.7	7,517
Road forks	33	23	44.4	81	48	05.3	6,640
Center of bridge over Town's Creek	33	23	22.7	81	48	47.9	4,223
Crossroads at Murray's store	33	22	56.0	81	49	55.7	6,353
Private crossroads	33	22	21.7	81	50	30.3	4,538
Crossroads	33	21	31.3	81	50	35.3	5,100
Road forks	33	22	09.5	81	51	27.1	5,849
Near southeast corner of quadrangle.							
Crossroads	33	15	13.6	81	45	30.7	.....
From Charleston & Western Carolina Ry. to Savannah River.							
Hankinson flag station, road crossing at	33	19	49.8	81	49	58.2	.....
Road forks	33	19	12.5	81	50	36.8	4,996
Silver Bluff Landing, Army b. m. No. 15	33	18	38.4	81	51	25.0	5,340
Along Charleston & Western Carolina Ry. from Augusta southeast. (By E. L. McNair in 1918.)							
Savannah River bridge, center swing span	33	26	07.1	81	54	52.1	.....
Road crossing	33	25	40.1	81	54	47.9	2,756
Road crossing	33	24	45.8	81	54	27.5	5,752
Road crossing	33	24	16.0	81	54	06.9	3,485
Road crossing	33	24	00.6	81	53	46.7	2,313
Beech Island, U. S. Coast and Geodetic Survey triangulation station (previously described)	33	23	41.3	81	53	22.6	2,830
On Savannah River. (By B. H. Yoakum in 1918.)							
Augusta, 4 miles east of, about 150 feet southwest of ferry landing, on south side of wagon road; concrete post, marked "U. S. C. E. B. M. No. 4"	33	26	24.1	81	54	54.2	.....

AWENSDAW QUADRANGLE.

Northeast along highways through southeast corner of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of small bridge	33	00	31.7	79	38	18.9	.....
Center of small bridge	33	00	46.9	79	38	04.6	1,959
Crossroads	33	01	22.1	79	37	48.3	3,819
Center of bridge over Awensdaw Creek	33	01	47.5	79	37	30.1	2,999
Road fork	33	02	13.2	79	36	59.0	3,707
Center of small bridge	33	02	17.5	79	36	03.4	4,750
Road fork	33	02	41.6	79	34	56.4	6,203
Crossroads	33	02	43.6	79	34	07.4	4,177
Crossing tramway	33	03	00.6	79	33	49.3	2,310
Road fork at milepost 29	33	03	31.7	79	33	10.5	4,557
Road fork	33	04	07.8	79	32	45.7	4,212
Northeast end of long tangent	33	05	10.1	79	31	33.5	8,800
McClellansville, 3 miles west of, at intersection of road at 32-mile house; post stamped "Prim. Trav. Sta. No. 2 J"	33	05	33.5	79	31	04.6	3,405
Junction with line east and west	33	05	35.7	79	31	04.4	230
Center of road, opposite house and gate	33	06	45.1	79	30	16.2	8,118

Southeast along highways through quadrangle. (By Oscar Jones in 1917.)

Center of bridge	33	14	52.1	79	38	23.3	.....
Center of road, opposite house and gate	33	14	17.5	79	38	14.9	3,564
Crossing of tramway	33	13	40.2	79	37	50.7	4,292
Road fork	33	13	12.4	79	37	21.5	3,748
Center of road, opposite school	33	12	27.2	79	37	02.2	4,857
Road fork, 250 feet east of bridge	33	11	41.1	79	36	27.3	5,517
Road fork	33	11	31.5	79	36	14.6	1,450
Fork of roads to Honey Hill and McClellansville; iron post stamped "Prim. Trav. Sta. No. 8 J"	33	10	42.4	79	35	20.9	6,737
Crossroads	33	11	05.9	79	34	44.3	3,916
Crossroads	33	11	01.5	79	33	58.0	3,959
Road fork	33	10	30.6	79	33	35.2	3,674
Road fork	33	09	48.5	79	32	55.8	5,412
Center of small culvert	33	09	35.1	79	32	47.9	1,510
Center of small culvert	33	09	11.8	79	32	34.1	2,630
Center of bridge	33	09	03.1	79	32	34.5	878
Road fork	33	08	01.7	79	32	42.9	5,200
Center of bridge	33	07	36.9	79	32	28.8	3,720
Center of bridge	33	07	09.2	79	32	14.8	3,041
Center of small bridge over ditch	33	06	42.2	79	31	51.8	3,352
Station 1544=198, BA 3721, junction line north and south	33	05	35.7	79	31	04.4	7,831
Center of road, opposite milepost 33	33	05	44.0	79	30	22.9	3,627

Southwest along highways.

Prim. Trav. Sta. No. 8 (previously described)	33	10	42.4	79	35	20.9	.....
Center of road, opposite pine tree on west side of road, marked "U. S."	33	09	26.1	79	36	38.3	10,140
Crossroads	33	08	56.7	79	37	26.7	5,064
Crossroads at Posed	33	08	16.5	79	38	01.1	5,006
Road fork	33	07	39.5	79	38	12.5	3,862
Crossroads	33	07	10.4	79	38	44.2	3,986
Center of road, opposite school	33	06	52.6	79	38	50.0	1,867
Road fork at house	33	06	35.1	79	38	56.3	1,848
Halfway Creek, center of bridge over	33	05	20.9	79	39	43.8	8,513
Center of road, opposite pine tree on east side marked "U. S."	33	04	35.3	79	40	39.1	6,586
Road fork	33	04	06.9	79	41	03.4	3,537
Road fork	33	03	24.6	79	41	45.6	5,579
Road fork	33	02	50.5	79	42	05.0	3,819
Crossroads	33	02	37.2	79	42	28.2	2,385
Road fork	33	02	13.2	79	43	02.6	3,804
Road fork	33	01	51.3	79	43	11.4	2,333
Tramway crossing	33	01	48.9	79	43	19.3	715
Road fork (McNair takes line.)	33	01	25.3	79	43	56.0	3,930
Road crossing at Tuxbury Lumber Co.'s railroad	33	00	17.3	79	44	37.7	7,736

Magnetic declination for southwest part of quadrangle, 1.2° W.

AWENSDAW QUADRANGLE—Continued.

North along highways near east border of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Tie point	33 01 11.1	79 43 59.8	.....
Forks of road	33 01 21.8	79 43 57.0	1,102
Road crossing on Tuxbury Lumber Co.'s railroad	33 01 49.2	79 43 19.1	4,251
Road crossing	33 03 04.5	79 44 16.2	8,748
Right of way, at edge, in blazed spot on pine tree, 3 feet above ground; nail	33 03 24.8	79 44 33.2	2,510
Road crossing	33 03 54.9	79 44 59.5	3,785

BAMBERG QUADRANGLE.

From Denmark southwest along Atlantic Coast Line R. R. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Denmark, crossing of Atlantic Coast Line and Seaboard Air Line railroads	33 19 11.1	81 08 39.1	.....
Road crossing	33 19 00.6	81 08 51.2	1,475
Road crossing, second class	33 18 15.2	81 09 43.6	6,399
Road crossing, public	33 17 55.5	81 10 14.1	3,255
Road crossing, public	33 17 24.6	81 11 08.3	5,566
Road crossing, second class	33 17 12.0	81 12 16.0	5,885
Road crossing	33 16 58.2	81 13 00.4	4,020
Road crossing	33 16 47.5	81 13 34.8	3,110
Road crossing, 20 feet east of milepost 71	33 16 27.3	81 14 39.4	5,850
Hildasta, 400 feet west of, 80 feet south of center of track; iron post stamped "Prim. Trav. Sta. No. 101, 1918, Mac." Azimuth to tower on public school is 265° 45′ 15″	33 16 22.7	81 14 51.4	1,123
Northeast along Seaboard Air Line Ry.			
Milepost 224	33 15 07.0	81 09 45.1	.....
Second-class road crossing	33 16 01.7	81 09 22.1	5,872
Road crossing, at spur siding	33 16 29.3	81 09 12.9	2,890
Second-class road crossing	33 16 56.4	81 09 03.7	2,855
Second-class road crossing	33 18 10.3	81 08 47.2	7,601
Second-class road crossing	33 18 30.4	81 08 44.5	2,040
Denmark, intersection of Seaboard Air Line and Atlantic Coast Line railroads	33 19 11.1	81 08 39.1	4,141
Denmark, 40 feet N. 56° E. from crossing of Southern Ry., and Seaboard Air Line Ry., 30 feet west of Seaboard Air Line Ry., in line with telephone poles; iron post stamped "Prim. Trav. Sta. No. 88, 1917 Mac." Azimuth to south edge of Bank of Denmark brick building is 277° 38′ 45″	33 19 33.60	81 08 35.75	.....
East along Atlantic Coast Line R. R.			
Crossing of Southern and Atlantic Coast Line railroads	33 19 28.7	81 08 18.7	1,520
Sato station, road crossing at east end of	33 19 18.2	81 07 38.8	3,550
Private-road crossing at milepost 18	33 19 05.0	81 06 49.2	4,420
Public-road crossing	33 18 55.8	81 06 14.3	3,105
Ott spur siding, road crossing	33 18 44.9	81 05 33.1	3,670
Private-road crossing	33 18 35.3	81 04 57.5	3,170
Private-road crossing	33 18 25.5	81 04 20.9	3,265
Private-road crossing	33 18 17.7	81 03 51.8	2,590
Public-road crossing	33 18 03.4	81 02 58.8	4,730
Bamberg station, 350 feet N. 54° W. of city water tower, 90 feet from northwest corner of Bamberg, Ehrhardt & Walterboro Ry. station, 18 feet west of center of track, and 20 feet north of center of street line; iron post stamped "Prim. Trav. Sta. No. 89, 1917 Mac." Azimuth to church 0.5 mile distant, 198° 28′ 40″; to city water tower, 306° 07′ 45″	33 17 44.7	81 02 17.7	3,961
Intersection of railway tangents, angle of 8.5°	33 17 11.5	81 02 29.9	3,510
Public-road crossing	33 16 28.0	81 02 36.7	4,440
Pile bridge over creek crossing	33 16 04.0	81 02 37.3	2,420
Second-class road crossing	33 15 29.5	81 02 38.1	3,495

BAMBERG QUADRANGLE—Continued.

West along highways near south border of quadrangle. (By H. S. Senseney in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Bamberg, 1.5 miles south of, 1,905 feet north of milepost marked "Bamberg 2, Ehr. 12," road crossing	33	16	28.0	81	02	36.7	.....
Second-class road west	33	15	44.9	81	03	06.0	5,014
Second-class road west	33	15	04.5	81	03	26.2	4,432
T road west to Glenndale Springs	33	15	21.0	81	04	29.4	5,613
T road west at cotton gin (Olar quadrangle)	33	14	19.3	81	05	33.0	8,249
T road west	33	15	01.5	81	05	50.8	4,521
Bamberg, about 5 miles southwest of, on road to Govan, 15 feet north and 50 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 15 S, 1918"	33	15	51.4	81	06	12.8	5,375
Second-class T road south	33	15	31.4	81	07	03.6	4,765
T road north	33	15	22.7	81	07	22.6	1,843
Crossroads	33	15	11.7	81	07	45.1	2,206

Magnetic declination for south border of quadrangle, 0.8° W.

Along Southern Ry. through center of quadrangle. (By E. L. McNair in 1918.)

Road crossing	33	19	51.4	81	09	29.3	.....
Road crossing	33	20	00.9	81	09	53.3	2,250
Road crossing at switch stand, Frogles spur	33	20	15.2	81	10	28.9	3,343
Road crossing	33	20	23.1	81	10	48.9	1,877
Milepost 23, center of track opposite	33	20	38.0	81	11	39.7	4,572
Lees flag station, road crossing at	33	20	53.1	81	12	42.6	5,544
Road crossing	33	21	02.7	81	13	46.8	5,534
Rose Mary spur, switch stand at	33	21	10.3	81	14	38.6	4,461
Bamberg, Prim. Trav. Sta. No. 89, 1917 Mac. (previously described)	33	17	44.7	81	02	17.7	.....
Center of track at city-limit post	33	17	37.5	81	01	22.8	4,718
Road crossing	33	17	28.6	81	00	49.8	2,940

From Denmark north along Seaboard Air Line Ry. (By U. S. Coast & Geodetic Survey and George T. Hawkins in 1918.)

Denmark triangulation station (U. S. C. & G. S.), on the Seaboard Air Line Ry. right of way, on the east bank of the cut, 750 meters south of milepost 229, 400 meters south of the Atlantic Coast Line R. R. crossing at Denmark railroad station, 5.3 meters east of east rail of main track and about 2 meters above the track, U. S. Coast and Geodetic Survey bench mark K_1 distant 13.23 meters; tablet set in top of concrete post	33	18	57.94	81	08	41.07	.....
Denmark, Prim. Trav. Sta. No. 88, Mac	33	19	33.60	81	08	35.75	.....
Road crossing	33	19	57.3	81	08	33.0	2,398
Road crossing	33	20	28.5	81	08	28.9	3,160
Plaza, on the Seaboard Air Line Ry. right of way, 75 meters south of milepost 231, about 1.5 miles north of Denmark railroad station, 2.36 meters west of west rail of main track, U. S. Coast and Geodetic Survey bench mark N_1 distant 10.12 meters; tablet set in top of concrete post	33	21	02.23	81	08	24.84	3,427
Road crossing	33	21	15.8	81	08	22.8	1,382
Road crossing, U. S. Coast and Geodetic Survey bench mark is 15 feet east	33	22	44.1	81	08	11.0	8,980
South end of iron bridge	33	23	37.3	81	08	03.9	5,410
Otside, on the Seaboard Air Line Ry. right of way, 600 meters south of milepost 235, about 1.33 miles north of Otside railroad station, 2.71 meters east of east rail of main track, U. S. Coast and Geodetic Survey bench mark P_1 distant 10.53 meters; tablet set in top of concrete post	33	24	12.84	81	07	59.07	3,611
South Norway, crossing	33	25	20.4	81	07	50.1	6,868
South Norway, crossing	33	25	37.7	81	07	47.8	1,760
Creco, on the Seaboard Air Line Ry. right of way, 710 meters north of milepost 236, about 1 mile south of Norway railroad station, 120 meters south from a road crossing, 2.85 meters west of west rail of main track, U. S. Coast and Geodetic Survey bench mark Q_1 distant 147.96 meters; tablet set in top of concrete post	33	25	47.27	81	07	46.65	969
Road crossing, 30 feet southeast to U. S. Coast and Geodetic Survey bench mark	33	25	52.4	81	07	45.7	530
Road crossing	33	26	56.5	81	07	37.2	6,520
Norway station, at north end of, road crossing	33	27	05.5	81	07	35.9	911
Road crossing	33	28	06.4	81	07	27.8	6,200
Road crossing at two old houses east of railroad	33	28	24.8	81	07	25.3	1,870

BAMBERG QUADRANGLE—Continued.

From Denmark north along Seaboard Air Line Ry.—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Norway station, on the Seaboard Air Line Ry. right of way, 375 meters north of milepost 240, about 2 miles north of Norway railroad station, 60 meters north of a whistling post, 150 meters south from a private-road crossing, 6.54 meters east of east rail of main track, U. S. Coast and Geodetic Survey bench mark T_1 distant 69.37 meters; tablet set in top of concrete post	33	29	03.80	81	07	19.82	3,963
Norway A, on the Seaboard Air Line Ry. right of way, at first curve north of Norway railroad station, about 1 mile north of milepost 240, at intersection of prolongation of southward tangent to curve of east rail and northward tangent to curve of west rail of main track, 2.02 meters west of west rail and about 1 meter below the track, U. S. Coast and Geodetic Survey bench mark U_1 distant 68.79 meters, is 4.99 meters west of west rail of main track; tablet set in top of concrete post	33	29	37.24	81	07	15.55	3,396
Second-class road crossing	33	30	00.7	81	07	07.5	2,472
Along highways near northwest corner of quadrangle.							
Springfield, 3 miles east of, at northeast corner of crossroads, 3 feet east of telephone pole; iron post stamped "Prim. Trav. Sta. No. 53 H, 1918"	33	29	45.9	81	13	55.3	.....
Road forks to south at mail box 42	33	29	36.7	81	14	18.7	2,191
Creek south	33	29	32.7	81	14	43.5	2,142
Along highways near east border of quadrangle. (By Oscar Jones in 1919.)							
Bamberg, Prim. Trav. Sta. No. 89 (previously described)	33	17	44.70	81	02	17.70	.....
Road fork	33	18	12.8	81	02	06.8	2,994
Road fork	33	19	05.0	81	01	59.0	5,308
Crossroads	33	19	28.7	81	01	51.7	2,477
Bamberg, 3 miles north of, 600 feet south of bridge over Edisto River; iron post stamped "Prim. Trav. Sta. Elev. 142"	33	20	07.6	81	01	10.9	5,246
Road fork at temporary bench mark marked "162"	33	21	14.1	81	00	38.9	7,246
Road fork	33	21	50.9	81	00	08.7	4,516
Cope, 200 feet northeast of station, crossroads	33	22	40.4	81	00	25.5	.....
Center of culvert	33	23	15.2	81	00	43.5	3,833
T road east	33	24	02.4	81	00	55.2	4,863
Copes, 2 miles north of, at road forks, elevation marked "264"	33	24	28.5	81	00	58.7	2,660
Crossroads	33	25	42.9	81	01	04.1	7,530
Road fork	33	26	16.2	81	01	00.3	3,385
Crossroads	33	26	53.6	81	01	13.3	3,934
Cope, 5.50 miles north of, at road fork; iron post, bench mark elevation 274	33	27	13.8	81	01	15.6	2,055
Creek crossing, at road fork	33	27	56.0	81	00	37.8	5,334
Road fork	33	28	30.2	81	00	15.3	3,945

Magnetic declination for east border of quadrangle, 0° 12′ W.; for north border of quadrangle, 0° 15′ W.

BATESBURG QUADRANGLE.

Along highways near south border of quadrangle. (By B. H. Yoakum in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Monetta, 7.5 miles southeast of, at junction of Two Notch road and Ninety Six road, at residence of T. R. Jones, 15 feet north of crossroads; iron post stamped "Prim. Trav. Sta. No. 12, 1918 Y"	33	45	48.4	81	32	43.6	.....
G. L. Sander's house, crossroads 250 feet east of	33	45	19.3	81	39	04.1	.....
Cotton gin, bridge over mill race at	33	45	30.1	81	39	30.4	2,474
Fork of road, 270 feet south of fork at Rev. W. T. Kennors's mail box, 500 feet east of J. M. Day's house, at mail box 87	33	45	31.1	81	40	12.2	3,530
Henry Johnson's house, forks in front of	33	45	28.0	81	40	43.8	2,685
New bridge over South Edisto River, north end of	33	45	14.9	81	41	06.6	2,333

BATESBURG QUADRANGLE—Continued.

From Leesville north along east border of quadrangle. (By E. L. McNair in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Leesville, Prim. Trav. Sta. No. 49 H (previously described)	33	55	03.07	81	30	46.28	
T road corner	33	55	17.5	81	30	04.8	2,136
Road forks, 60 feet southeast of telephone pole	33	55	56.6	81	31	31.6	4,553
Forks of roads to Leesville and to Batesburg	33	56	21.3	81	32	05.0	3,761
Center of bridge crossing Lick Creek	33	57	03.8	81	32	00.7	4,319
Private road east at two mail boxes	33	58	24.5	81	31	40.7	8,330
T road east	33	58	46.4	81	31	36.1	2,245
T road northwest	33	58	58.0	81	31	30.2	1,273
Forks of road	33	59	50.6	81	30	59.7	5,905
Leesville, 6.7 miles north of, on road to Prosperity, 600 feet north of milepost 6 miles from Batesburg, 70 feet north of forks of road, 3 feet west of signboard between forking roads; iron post stamped "Prim. Trav. Sta. No. 1, 1919 M" Azimuth to copper nail in root of oak tree 960 feet distant is 177° 32′ 00″	34	00	16.1	81	30	53.5	2,629
Forks of road, point is 25 feet north of telephone pole	33	54	38.9	81	30	41.6	
Crossroads	33	54	02.3	81	30	40.4	3,693
Road forks	33	53	28.5	81	30	45.3	3,449
Forks of road 0.35 mile north of Kneece	33	52	27.5	81	30	49.7	6,174
T road west to church	33	51	43.8	81	30	18.9	5,126
Center of road at milepost 4	33	51	38.3	81	30	15.0	645
Crossroads	33	51	30.3	81	30	09.3	941
Crossroads	33	47	57.7	81	30	10.6	
Forks of road	33	47	26.0	81	30	28.9	3,668
Crossroads	33	47	19.0	81	30	44.4	1,487
Road forks	33	47	03.8	81	31	00.7	2,066
Crossroads	33	46	52.7	81	31	28.4	2,589
Road crossing	33	46	18.3	81	32	09.2	4,901
Monetta, 7.5 miles southeast of, "Prim. Trav. Sta. No. 12 Y, 1918" (previously described)	33	45	48.4	81	32	43.6	4,193

Along north border of quadrangle.

Crossroads	33	59	39.3	81	37	41.0	
Crossroads, 430 feet west of milestone 44	33	59	34.8	81	37	57.9	1,492
Crossroads	33	58	57.3	81	38	51.8	5,917
Crossroads	33	58	45.7	81	39	07.4	1,762
Batesburg, 10 miles northwest of, on Batesburg-Chappels road, about 1,250 feet southeast of C. D. Dulurers house, 50 feet southeast of forks of road; iron post stamped "Prim. Trav. Sta. No. 3, 1919 Mac." Azimuth to east edge of chimney on house 0.4 mile distant is 156° 40′ 50.″	33	59	12.9	81	40	28.1	7,330
Crossroads	33	59	38.3	81	40	47.4	3,043
Crossroads	33	59	55.9	81	41	11.8	2,715
T road south	33	59	49.4	81	42	33.8	6,937
Crossroads	33	59	59.6	81	43	16.0	3,694

South near west border of quadrangle.

Road crossing	33	56	24.4	81	44	49.4	
Road crossing	33	55	44.3	81	43	49.9	6,453
Road crossing at sawmill	33	55	12.7	81	43	46.5	3,195
Creek crossing	33	54	43.9	81	43	55.8	3,017
Public-road crossing	33	54	21.6	81	44	03.6	2,340
Road crossing at Spigener flag station	33	54	11.6	81	44	00.7	1,039
Small creek crossing	33	53	21.7	81	43	50.9	5,109
Road crossing	33	52	53.1	81	43	48.6	2,896
Road crossing	33	52	19.1	81	43	50.2	3,440
Public-road crossing	33	51	50.8	81	43	42.7	2,925
Ward station, 250 feet east of, 6 feet north of main line between tracks; iron post stamped "Prim. Trav. Sta. No. 50,1918 H"	33	51	26.9	81	43	49.9	2,485
T road south	33	51	21.6	81	44	23.3	2,863

From southeast corner northwest to post 12. (By E. L. McNair in 1919.)

Second-class crossroad	33	45	27.6	81	32	05.8	
"Prim. Trav. Sta. No. 12, 1918 Yoakum"	33	45	48.37	81	32	43.62	3,820

Magnetic declination in northeast quarter of quadrangle, 00° 04′ W.; along east border, 00° 14′ E.; along north border, 00° 11′ E.; along west border, 00° 07′ W.

BATESBURG QUADRANGLE—Continued.

East along Southern Ry. through center of quadrangle. (By George T. Hawkins in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	33	51	18.1	81	44	23.0	
Ward, 250 feet east of station, 6 feet north of main line, between tracks; iron post stamped "Prim. Trav. Sta. No. 50, 1918 H"	33	51	26.88	81	43	49.93	2,923
Road crossing	33	51	16.7	81	42	51.0	5,073
Road crossing, 20 feet northeast to sign	33	51	07.0	81	41	59.7	4,432
Road crossing	33	50	51.2	81	40	35.4	7,285
Road crossing, 100 feet west of Ridge Spring station	33	50	41.6	81	39	43.3	4,502
County-road crossing	33	50	40.3	81	38	52.4	4,294
Road crossing	33	50	39.7	81	38	12.8	3,340
Station 215, 1,025 feet southwest of bench mark 51, on south rail	33	50	51.5	81	36	45.3	7,474
Monetta, on west side of track, 100 feet southwest of station; iron post stamped "Prim. Trav. Sta. No. 51, 1918 H"	33	50	59.20	81	36	35.70	1,125
Road crossing	33	51	16.7	81	36	13.1	2,605
Road crossing	33	51	33.4	81	35	52.3	2,427
Second-class road crossing	33	52	15.4	81	35	30.0	4,648
Road crossing, 300 feet north of Hibernia	33	53	09.2	81	35	02.3	5,919
Second-class road crossing	33	53	41.3	81	34	30.3	4,216
Second-class road crossing	33	53	50.0	81	34	14.8	1,582
Batesburg station, 900 feet west of, east side of crossing, joint of south rail	33	54	16.8	81	33	04.4	6,520
Batesburg siding, east end of	33	54	30.8	81	32	27.0	3,453
Summerland, joint of crossing	33	54	40.1	81	31	55.0	2,855
Leesville, 100 feet southwest of station, 6 feet south of south rail, west of road crossing; iron post stamped "Prim. Trav. Sta. No. 49, 1918 H"	33	55	03.07	81	30	46.28	6,243
Goodrich signpost	33	55	21.9	81	30	00.7	4,288

No declination observed.

BISHOPVILLE QUADRANGLE.

Along highways west on south border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks	34	00	22.6	80	24	43.3	
Road forks at store	34	00	56.8	80	25	15.6	4,398
Dalzell, 50 feet north of station, center of track of Northwestern R. R. of South Carolina and road crossing	34	00	58.1	80	25	50.3	2,930
T road north	34	01	00.3	80	26	37.4	3,970
Road forks at house	34	01	24.2	80	27	34.5	5,381
Crossroads	34	01	53.8	80	27	45.5	3,140
Creek crossing	34	01	23.8	80	28	23.1	4,387
Road forks, 400 feet north of Catchall Church	34	00	56.8	80	29	16.0	5,220
Road forks, center of road opposite house	34	00	25.8	80	29	24.1	3,206

Magnetic declination for south border of quadrangle, 00° 47′ W.

BONNEAU QUADRANGLE.

Northeast along Atlantic Coast Line R. R. through west part of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Public-road crossing	33	15	05.2	79	58	40.8	
Public-road crossing, about 1,200 feet south of Macbeth station	33	16	04.0	79	58	19.5	6,219
Milepost Chn. 37	33	17	17.6	79	57	52.9	7,770
Bonneau station, across track from and nearly opposite south end of, 75 feet west of center of road bed, at edge of brush; iron post stamped "Prim. Trav. Sta. No. 19, 1917 Mac." Azimuth of railroad tangent to top of hill north, 196° 52′; from post to semaphore post on east side of track, about 1,800 feet south, 14° 25′	33	18	28.5	79	57	28.3	7,466

BONNEAU QUADRANGLE—Continued.

Northeast along Atlantic Coast Line R. R. through west part of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Iron-girder bridge, center of roadbed	33	19	15.5	79	57	10.3	4,991
Farm-road crossing	33	19	49.5	79	56	58.0	3,590
Second-class road crossing	33	20	46.4	79	56	37.5	6,000
Second-class road crossing	33	21	24.6	79	56	23.6	4,045
Center of iron-girder bridge	33	22	04.4	79	56	09.3	4,200
Road crossing	33	23	07.9	79	55	46.3	6,710
Road crossing	33	23	57.9	79	55	28.2	5,280
St. Stephens station, 75 feet south of, 80 feet west of center of railroad bed, 40 feet south of street, on open, level ground; iron post stamped "Prim. Trav. Sta. No. 20, 1917 Mac." Azimuth of long railroad tangent northward, 196° 53′; to semaphore post about 1,100 feet distant, on east side of track, 11° 31′ 30″	33	24	14.6	79	55	23.2	1,740
Public-road crossing, about 0.3 mile north of St. Stephens station	33	24	31.4	79	55	16.0	1,797
Switch stand, north end of tower, single track	33	25	25.0	79	54	56.6	5,670
South end of steel-girder bridge	33	26	12.7	79	54	39.4	5,030
North end of steel-girder bridge	33	26	36.1	79	54	30.9	2,470
Center of swing span, Santee River bridge, 130 feet south of center of river	33	27	20.5	79	54	14.8	4,690
Santee Bluff, beginning of double track; switch stand	33	28	06.5	79	53	58.1	4,680
Gourdin station, 1,100 feet south of, public-road crossing	33	28	58.4	79	53	39.2	5,490

Southeast along railroad.

Second-class road crossing	33	29	43.8	79	45	33.1	7,170
Blakely station, road crossing	33	29	40.8	79	45	20.7	1,090

West along highways near south border of quadrangle. (By E. L. McNair in 1917.)

Swamp crossing at lowest ground, now dry	33	15	24.3	79	51	59.6	.....
Forks of road	33	15	48.4	79	52	40.4	4,229
Crossroads	33	16	07.2	79	53	39.6	5,371
Bonneau, about 5 miles southeast of, 130 feet west of Providence Church, 10 feet south of forks of road; iron post stamped "Prim Trav. Sta. No 72, 1917 Mac."	33	16	13.2	79	53	52.3	1,237
Road forks	33	16	08.2	79	54	30.3	3,264
Road forks	33	15	23.4	79	56	05.3	9,361

Magnetic declination for south border of quadrangle, 1.1° W.

Unchecked spur line south along highways. (By Oscar Jones in 1918.)

Santee River, double willow tree on north bank of, 20 feet west of boat landing at outlet of small slough; tree blazed on 3 sides, has nail in each blaze and is marked "U. S."	33	29	58.6	79	58	01.0	.....

From Lonestar east along Santee River road across west-central part of quadrangle to St. Stephens. (By Oscar Jones in 1919.)

Center of tavern bridge	33	26	17.9	79	59	45.4	.....
Cemetery, road fork to	33	26	07.4	79	58	26.1	6,811
Peru Plantation, settled 1700 A. D., road fork at	33	25	58.1	79	58	05.7	1,959
Crossroads	33	25	46.6	79	57	36.0	2,776
Center of bridge	33	25	29.4	79	56	56.4	3,777
Gates across road	33	25	15.9	79	56	23.7	3,086
Center of creek crossing	33	24	57.6	79	55	52.2	3,257
St. Stephens, Prim. Trav. Sta. No. 20 Mac. 1917 (previously described)	33	24	14.60	79	55	23.20	4,988

BONNEAU QUADRANGLE—Continued.

From Pineville southeast to Bonneau in west central part of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork	33	24	04.9	79	59	36.3	
Russellville, road fork at Murrell's Ferry and Bonneau-Pineville road	33	23	47.8	79	58	18.8	6,799
Center of bridge	33	23	06.5	79	57	54.6	4,645
Center of bridge at angle of road	33	22	02.7	79	57	32.3	6,724
Road fork	33	21	13.0	79	57	25.3	5,050
Crossroads	33	20	56.2	79	57	22.9	1,710
Center of bridge	33	20	10.2	79	57	16.1	4,690
Road fork at angle in road	33	19	51.4	79	57	13.6	1,900
Center of road, opposite house on west side of road	33	19	18.5	79	57	27.6	3,535
Center of bridge	33	18	50.7	79	57	30.2	2,819
Bonneau, Prim. Trav. Sta. No. 19, Mac. 1917 (previously described)	33	18	28.51	79	57	28.26	2,243

From station 6442 east to Bonneau in southwest corner of quadrangle.

Crossroads at gate across road	33	18	42.1	79	58	59.9	
Bonneau, Prim. Trav. Sta. No. 19, 1917 Mac. (previously described)	33	18	28.51	79	57	28.26	7,901

Magnetic declination for west central part of quadrangle 34′ W.

BOWMAN QUADRANGLE.

Along highways in southeast corner of quadrangle. (By E. L. McNair in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
St. George, 6 miles north of, 0.6 mile north of Indian Field Church, 6 miles northwest of Harleyville on Charleston-Orangeburg road, 100 feet northwest of crossroad, 15 feet north of center of road, 2.5 feet from gatepost at entrance to barnyard; iron post stamped "Prim. Trav. Sta. No. 7, 1918 Mac." Azimuth to south edge of chimney on west end of house 800 feet southeast, 308° 03′ 30″; to north edge of chimney on east end of house about 0.4 mile west, 120° 20′ 08″	33	15	16.6	80	31	40.8	
Crossroads	33	15	04.8	80	31	16.4	2,388

From St. George northwest along highway to Bowman. (By E. L. McNair in 1918.)

St. George, 6 miles north of; iron post stamped Prim. Trav. Sta. No. 7, 1918, Mac (described above)	33	15	16.6	80	31	40.8	
Forks of road	33	15	43.1	80	32	45.9	6,142
T road southwest	33	16	01.4	80	33	32.0	4,329
T road southwest	33	16	11.4	80	33	57.8	2,410
Crossing of lumber company's narrow-gage railroad	33	16	16.4	80	34	11.3	1,255
T road southeast	33	16	33.0	80	34	56.1	4,155
Forks of road	33	16	52.5	80	35	48.5	4,859
Second-class road southwest	33	17	16.9	80	36	54.2	6,100
T road about N. 25° E.	33	17	25.6	80	37	17.4	2,156
Road forks, road southeast	33	19	04.4	80	39	15.7	14,161
Forks of road	33	19	52.6	80	39	54.8	5,901
Angle of 9½° in road, centerline both ways	33	20	28.0	80	40	24.6	4,377
Bowman, at terminus of Branchville & Bowman R. R., 35 feet west of center of Main Street, just inside sidewalk and nearly on building line of street, 108 feet S. 52° E. from southeast corner of T. H. Knight & Sons' store, 120 feet N. 47° W. from northwest corner of Farris & Wise's store; iron post stamped "Prim. Trav. Sta. No. 8, 1918 Mac." Azimuth to northeast corner of T. H. Knight & Sons' store, 192° 42′; to west edge of chimney on Jim Cridolle's house, 700 feet distant, 200° 56′ 00″	33	20	57.25	80	41	00.36	4,235

BOWMAN QUADRANGLE—Continued.

From Branchville northeast along public road to Bowman.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Cattle Creek, center of bridge over	33	17	49.4	80	44	09.8	.....
Forks of road	33	18	05.2	80	43	49.1	2,370
Road crossing on Branchville & Bowman R. R	33	18	44.9	80	43	45.5	4,021
Forks of road	33	19	10.8	80	43	34.5	2,779
Road crossing on Branchville & Bowman R. R	33	19	19.0	80	43	13.6	1,955
Forks of road	33	19	24.3	80	42	37.1	3,149
Second-class crossroads	33	19	43.2	80	42	02.3	3,512
T road S. 20° E.	33	19	50.5	80	41	42.8	1,812
T road corners at church	33	20	42.7	80	41	03.7	6,231
Bowman "Prim.Trav.Sta.No.8" (previously described)	33	20	57.25	80	41	00.36	1,497

Magnetic declination for south half of quadrangle, 0° 39′ W.

From drainage station southeast through west central part of quadrangle to Bowman. (By Oscar Jones in 1919.)

Road fork at schoolhouse	33	24	49.2	80	44	55.6	.....
Road fork	33	23	52.3	80	44	03.5	7,250
Road fork	33	23	20.9	80	43	34.7	4,009
Road fork	33	22	48.5	80	43	05.0	4,129
Road fork	33	22	11.4	80	42	28.1	4,882
Crossroads	33	22	00.9	80	42	12.5	1,706
Center of bridge	33	21	39.4	80	41	49.2	2,940
Road fork	33	21	18.8	80	41	25.4	2,898
Bowman, Prim.Trav.Sta.No.8 McNair, 1918	33	20	57.25	80	41	00.36	3,046

Magnetic declination for west central part of quadrangle, 15′ W.

From Holly Hill west along State road to Bowman. (By Oscar Jones in 1919.)

Road fork	33	22	47.7	80	30	10.9	.....
T road north	33	22	56.4	80	30	50.4	3,460
Road fork southwest	33	22	56.3	80	31	30.2	3,379
Road fork	33	23	18.6	80	32	08.1	3,924
T road southwest, near Providence Church	33	23	33.5	80	32	31.5	2,490
Road fork near gin	33	23	10.1	80	32	52.2	2,941
Road fork	33	22	30.8	80	33	01.7	4,059
Four Hole Swamp, south end of main bridge over	33	21	48.8	80	33	39.5	5,313
Center of bridge	33	21	24.9	80	34	16.8	3,980
Road fork	33	21	12.4	80	34	54.1	3,401
T road west	33	21	02.9	80	35	19.4	2,353
Tram-road crossing	33	20	46.6	80	35	33.0	2,009
T road north	33	20	04.5	80	35	56.1	4,680
Road fork	33	19	52.2	80	36	18.8	2,288
Ebenezer Church, center of road, opposite T road north	33	19	58.9	80	36	48.2	2,583
Center of bridge	33	20	10.8	80	37	20.5	3,000
Angle in road, center line both ways	33	20	17.4	80	38	17.5	4,880
Center of bridge	33	20	25.4	80	38	40.9	2,145
Center of bridge	33	20	06.5	80	39	23.7	4,099
Center of road	33	19	52.6	80	39	54.8	2,990

From station 3,796 south to post 7 McNair, 1918.

Four Hole Swamp, west end of bridge, the west one of two bridges	33	18	03.2	80	30	00.5	.....
Road fork	33	17	59.6	80	30	13.6	1,170
Center of bridge	33	17	18.2	80	30	44.8	4,942
Road fork	33	16	49.0	80	31	03.2	3,338
Center of bridge	33	16	05.2	80	31	08.1	4,448
Center of road, opposite gate and house	33	15	39.3	80	31	24.2	2,947
Prim.Trav.Sta.No.7 McNair, 1918 (previously described)	33	15	16.61	80	31	40.80	2,688

Mean magnetic declination, 1° 02′ W.

Southeast along public road across northeast corner of quadrangle.

Road fork	33	29	41.7	80	31	17.4	.....
Parler, in front of R. Q. Moore's store, T road south	33	29	36.0	80	30	37.9	3,400
Cross roads	33	29	34.3	80	30	02.3	3,020

BOWMAN QUADRANGLE—Continued.

North along northeast border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Cross roads	33	25	14.0	80	30	17.5	.....
Smoke stack of sawmill and gin, center of road opposite	33	25	42.7	80	30	31.4	3,141
T road west	33	26	16.7	80	30	38.3	3,489
Well at white church, center of road opposite	33	26	52.1	80	30	53.0	3,796
Center of bridge	33	27	00.0	80	31	05.9	1,358
Cross roads	33	27	36.8	80	31	20.9	3,944
Cross roads	33	27	57.0	80	31	30.4	2,196
Center of bridge	33	28	20.0	80	31	21.1	2,462
Road fork	33	28	46.9	80	31	00.8	3,226
T road northwest	33	29	11.5	80	30	26.4	3,835
Parler, T road south at (previously described)	33	29	36.0	80	30	37.9	2,670

Mean magnetic declination, 1° 10′ W.

Northwest along State road to Cameron. (By Oscar Jones in 1919.)

Providence church, near, T road southwest (previously described)	33	23	33.5	80	32	31.5	.....
T road north at church	33	23	52.4	80	33	00.7	3,128
T road northeast	33	24	21.5	80	33	45.7	4,818
Road fork southwest, 500 feet southeast of store	33	24	38.5	80	34	12.0	2,820
Center of bridge	33	25	18.4	80	35	16.2	6,772
Church, center of road opposite	33	25	54.6	80	36	08.5	5,748
Road fork near church	33	26	28.4	80	36	59.2	5,490
Goodby Swamp, center of bridge	33	26	38.7	80	37	07.8	1,279
T road northeast at store	33	27	17.8	80	37	19.4	4,076
Road fork to Orangeburg	33	27	31.7	80	37	31.2	1,729
Road fork at J. R. Dantzler's mail box	33	28	05.2	80	38	00.1	4,180
Road fork to Elloree, 7 miles southeast of Cameron, on north side of State road, 2 feet west of telephone pole; iron post stamped "Prim. Trav. Sta. No. 73 J, 1919"	33	28	35.65	80	38	26.65	3,811
Road fork	33	29	15.1	80	39	01.1	4,949
Road fork	33	29	42.4	80	39	24.5	3,400

From Elloree southwest along public road to post 73.

Road fork, 300 feet east of church	33	29	47.9	80	36	37.7	.....
Creek crossing	33	29	32.4	80	37	11.2	3,241
Road fork	33	29	18.2	80	37	30.5	2,180
Prim. Trav. Sta. No. 73 J (previously described)	33	28	35.65	80	38	26.56	6,406

Northeast along public road across northwest corner of quadrangle.

Crossroads	33	27	32.8	80	44	49.7	.....
Creek crossing	33	27	48.4	80	44	38.4	1,845
Road fork	33	28	13.5	80	44	29.9	2,641
Center of culvert pipe	33	28	22.5	80	44	26.9	937
Center of bridge	33	28	43.3	80	44	08.0	2,643
Road fork	33	29	17.2	80	43	26.5	4,901
Tie station 7278=7304	33	29	18.0	80	43	25.3	130
T road north	33	29	19.4	80	42	49.4	3,042
Road fork	33	29	21.9	80	42	24.2	2,153
Road fork	33	29	23.3	80	41	15.9	5,783
South end of bridge over Four Hole Swamp	33	29	23.0	80	40	43.0	2,787

Northwest along public road in northwest corner of quadrangle.

Tie station 7304=7278 (previously described)	33	29	18.0	80	43	25.3	.....
Road fork	33	29	07.1	80	44	16.2	4,446
Road fork	33	29	11.6	80	44	46.8	2,640

Magnetic declination for northeast part of quadrangle, 4′ W.; for northwest part of quadrangle, 29′ W.

BULLS ISLAND 15′ QUADRANGLE (SEWEE BAY 7½′ QUADRANGLE).

Northeast along highways through northwest corner of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork at store	32	53	14.2	79	44	39.0	
Road fork	32	53	43.2	79	44	05.2	4,110
Road fork	32	54	12.0	79	43	43.2	3,464
Center of road, opposite milepost 13	32	54	40.9	79	43	22.0	3,438
Road fork	32	54	52.3	79	43	05.2	1,831
Crossing of tramway	32	55	10.5	79	42	34.6	3,190
Road fork, in triangle at; iron post stamped "Prim. Trav. Sta. No. 1 J"	32	55	43.1	79	43	07.7	4,331
Center of bridge	32	56	06.6	79	42	50.7	2,787
Road fork at Freeman house	32	56	18.3	79	42	36.3	1,695
Road fork at camp ground	32	57	33.7	79	41	18.5	10,108
Road fork	32	58	17.5	79	40	28.7	6,129
Center of road, opposite schoolhouse	32	58	50.5	79	39	36.8	5,536
Road fork	32	59	24.0	79	38	38.6	6,005
Road fork	32	59	51.3	79	38	39.2	2,758

Magnetic declination along line through northwest corner of quadrangle, 1.2° W.

Along highway in northwest part of quadrangle. (By E. L. McNair in 1917.)

Primary Traverse Station No. 1 (previously described)	32	55	43.1	79	43	07.7	
Freeman's place, T road corners	32	56	18.6	79	42	36.4	4,474
Road forks, at dim road north	32	56	40.1	79	42	47.2	2,365
Wards bridge over tidewater stream	32	56	42.4	79	43	32.3	3,848
At angle in road; granite post 10 inches square by 18 inches high, marked "XIII"	32	56	37.2	79	44	50.3	6,668

Magnetic declination near northwest corner of quadrangle, 1.3° W.

CALIBOGUE SOUND QUADRANGLE.

Along highways near north border of quadrangle. (By H. S. Senseney in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Bluffton, at northeast corner of old store building owned by Martin Oscar; iron post stamped "Prim. Trav. Sta. No. 6 S, 1918." Azimuth to southwest corner of house, about 500 feet north of post and on west side of road, 187° 13′ 10″	32	14	12.9	80	51	38.5	
Road forks	32	14	13.3	80	51	58.6	1,722
Bend in road, in front of blazed oak tree	32	14	28.7	80	53	24.3	7,524
Crossroads	32	14	06.9	80	54	02.5	3,951
Road south through gate, at mail box	32	13	52.9	80	54	27.1	2,542
O. G. Fuller's mail box, cross lanes at	32	13	52.2	80	55	26.0	5,062
East end of bridge	32	13	54.1	80	55	43.6	1,524
Road forks	32	14	04.0	80	56	51.4	5,910
T road north	32	14	15.6	80	57	51.4	5,284
Pritchardville post office, in front of, center of road	32	14	19.1	80	58	11.5	1,758
Pritchardville post office, 0.75 mile west of, 100 feet east of road forks, 30 feet west of fence corner; iron post stamped, "Prim. Trav. Sta. No. 7 S, 1918." Azimuth to nail in blaze on pine tree, 145 feet east of post and on south side of road, 290° 10′ 15″	32	14	31.4	80	59	00.1	4,360

Magnetic declination for north border of quadrangle, 0° 16′ E.

Camp Jackson Artillery Field.

Hagood, Hopkins, and Killian quadrangles.

KERSHAW AND RICHLAND COUNTIES.

The following positions on North American datum were determined in 1918 by primary traverse run by George T. Hawkins, P. W. McMillen, and L. F. Biggs. The positions are based on a mean value of U. S. Coast and Geodetic Survey primary traverse stations Nob A, Richland A, Hyatts, Elmwood A, Elmwood B, Columbia, Columbia D, and Columbia C. The lines follow highways and trails and lanes cut through the brush.

From iron post No. 59 to iron post No. 59 around border of the range. (By George T. Hawkins in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Columbia, 5 miles northeast of, at southeast corner of crossroads, 400 feet west of bridge, across the road and 80 feet from house; iron post stamped "Prim. Trav. Sta. No. 59, 1918 H. Elev. 177".	34	01	05.92	80	57	58.84	
North side of road; copper nail in hub	34	01	17.56	80	57	30.26	2,680
North side of road, at forks, 50 feet west of G. G. Davis's mail box; copper nail in hub	34	01	25.62	80	57	06.40	2,245
Granite milepost 6, center of	34	01	42.30	80	56	45.48	2,377
Columbia, 5.5 miles northeast of, on southeast side of road, 5 feet east of nail in blaze on pine tree; iron post stamped "Prim. Trav. Sta. No. 60, 1918 H"	34	02	07.98	80	56	22.41	3,244
Copper nail in hub, south of road, 5 feet east and 4 feet south to post with 3 notches cut on side	34	02	25.56	80	56	11.08	2,015
Nail in top of stump, 70 feet northwest of Beulah Church at forks	34	02	31.79	80	56	01.83	1,000
Copper nail in hub, at southeast corner of crossroads, 3 feet north of bank	34	02	56.89	80	55	44.31	2,936
Nail in hub, 30 feet northeast of forks, on south side of road	34	03	10.91	80	55	17.98	2,631
Columbia, 9 miles northeast of, on south side of road, in front of house, 2 feet south of mail box No. 35; iron post stamped "Prim. Trav. Sta. No. 61, 1918 H, 307"	34	03	23.83	80	54	55.48	2,300
Copper nail in hub, south of road and opposite schoolhouse, 27 feet northwest to nail in blaze, 24 feet southwest to blaze	34	03	49.15	80	54	33.82	3,142
Copper nail in hub, north of road, 700 feet northeast of house, 34 feet south to nail in pine tree, 4 feet west to nail in pine tree	34	04	11.08	80	54	15.51	2,700
Copper nail in hub, north of road, at forks, 20 feet north to nail in oak tree	34	04	23.96	80	53	58.33	1,942
Columbia, 11 miles northeast of, on south side of road, opposite new house, 20 feet west of forks, 10 feet east to nail in pine tree; iron post stamped "Prim. Trav. Sta. No. 62, 1918 H. Elev. 312 feet"	34	04	32.33	80	53	26.28	2,830
Nail in hub, south of road, 100 feet southwest of forks, 3 feet south to nail in pine tree	34	04	48.37	80	52	54.96	3,094
Nail in hub, south of road, 400 feet east of creek, 45 feet southwest to nail in pine tree, 20 feet east to nail in pine tree	34	04	56.32	80	52	24.40	2,694
Columbia, 13 miles northeast of, south of road, 900 feet southwest of milepost 13, 12 feet southwest to nail in pine tree; iron post stamped "Prim. Trav. Sta. No. 63, 1918 H. Elev. 370 feet"	34	05	12.66	80	51	47.24	3,536
Nail in hub, 20 feet northeast of crossroads, 36 feet northeast to nail in pine tree, 57 feet south to nail in pine tree	34	05	27.84	80	51	17.92	2,903
Nail in hub, north side of road, 60 feet east to nail in pine tree, 50 feet southeast to nail in pine tree	34	05	35.29	80	50	45.13	2,860
Nail in hub, south side of road, west of stream, 30 feet southwest to nail in pine tree, 30 feet east to nail in oak tree	34	05	43.10	80	50	14.64	2,681
Nail in hub, north side of road, ⅓ mile west of church, 8 feet northwest to nail in oak tree	34	06	03.81	80	49	49.76	2,960
Spear Creek Church, near southwest corner of churchyard, 18 feet east to corner of fence; iron post stamped "Prim. Trav. Sta. No. 64, 1918 H. Elev. 349"	34	06	12.69	80	49	32.12	1,720
Granite milepost 16, center of	34	06	17.44	80	48	59.62	2,793
Nail in hub, on north side of road, at forks, 7 feet northwest to nail in pine tree	34	06	17.14	80	48	23.29	3,055
Granite milepost 17, center of	34	06	09.74	80	48	03.66	1,814
Spear Creek Church, 2 miles southeast of, 1,000 feet east of milepost 17, at forks, on south side of road; iron post stamped "Prim. Trav. Sta. No. 65, 1918 H. 335"	34	06	06.74	80	47	52.38	995
Nail in hub, south of road, 13 feet east to nail in oak tree, 13 feet northwest to nail in oak tree	34	05	57.38	80	47	19.02	2,960

From iron post No. 59 to iron post No. 59 around border of the range—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Nail in hub, west side of wire road at second-class crossroad, 37 feet to nail in oak tree east of road	34	05	50.25	80	46	54.31	2,200
Stone on Richland and Kershaw county line, east side of wire road	34	06	09.00	80	46	45.86	2,025
Stone on county line, south of second-class road	34	06	09.18	80	46	42.69	268
Stone on county line, south of second-class road	34	06	08.87	80	46	39.24	291
Stone on county line, south of second-class road, 10 feet northeast to blazed tree	34	06	02.40	80	46	16.36	2,032
Crossroads, southeast corner of, 20 feet north to nail in oak tree, 36 feet east to nail in oak tree; iron post stamped "Prim. Trav. Sta. No. 66, 1918 H, 357"	34	05	58.15	80	46	05.06	1,039
Copper nail in hub, south of road, 15 feet east to nail in oak tree, 26 feet north to nail in oak tree, 30 feet west to nail in oak tree	34	05	58.76	80	45	30.09	2,942
Copper nail in stump, south of road, 37 feet northeast to U. S. mark on dead pine tree	34	06	04.42	80	45	07.11	2,017
Copper nail in hub, at forks, 18 feet south to nail in pine tree, 22 feet west to nail in pine tree, 25 feet north to nail in pine tree	34	06	18.68	80	44	43.49	2,454
On south side of road, 5 feet north of wire fence, 200 feet east of gate, 20 feet east of blaze on pine tree; iron post stamped "Prim. Trav. Sta. No. 67, 1918 H"	34	06	34.85	80	44	28.87	2,045
Copper nail in hub, south of road, 300 feet northeast of house, 2 feet north of gatepost to cowpen	34	06	40.29	80	43	57.16	2,723
House, 200 feet west of, middle of road at gate	34	06	46.79	80	43	46.50	1,109
Copper nail in hub, 30 feet northeast of Boston Jefferson's house, 6 feet east to nail in hickory tree	34	06	47.86	80	43	30.13	1,377
Copper nail in hub, east of road, 12 feet north to nail in oak tree, 10 feet east to nail in oak tree	34	06	24.98	80	43	16.29	2,588
In northwest corner of field, on east side of road, 13 feet northeast to blaze, 31 feet north to blaze 36 feet southwest to blaze; iron post stamped "Prim. Trav. Sta. No. 68, 1918 H"	34	05	50.82	80	43	05.90	3,562
Copper nail in hub, at northeast corner of crossroads, 2 feet north to gatepost marked "U. S.", 10 feet southwest to gatepost marked "U. S."	34	05	27.18	80	42	35.92	3,474
Copper nail in hub, 20 feet east of road, 2 feet east of nail in oak tree, 12 feet southeast of nail in oak tree	34	05	07.96	80	42	03.65	3,338
English post office, 750 feet east of, on northwest side of road, at southeast corner of barn; iron post stamped "Prim. Trav. Sta. No. 69, 1918 H"	34	04	47.66	80	41	53.84	2,211
English crossroads, ½ mile southeast of	34	04	32.59	80	41	43.86	1,738
Granite milepost marked "21," center of	34	04	16.89	80	41	51.95	1,725
Copper nail in hub, east of road, 6 feet southwest to "U. S." on pine tree	34	03	55.12	80	42	07.72	2,569
Copper nail in hub, east of road, 34 feet north to "U. S." on pine tree, 23 feet northeast to "U. S." on pine tree, 7 feet south to "U. S." on pine tree	34	03	28.33	80	42	10.91	2,720
Piney Grove School, 2 miles north of, on west edge of road, 45 feet north to "U. S." on oak tree, 25 feet northeast to "U. S." on pine tree; iron post stamped "Prim. Trav. Sta. No. 70, 1918 H"	34	02	58.96	80	42	20.90	3,085
Granite milepost marked "19," center of	34	02	39.56	80	42	19.79	1,963
Copper nail in hub, west of road, 20 feet north of blazed oak tree, 35 feet northeast of "U. S." on pine tree	34	02	09.91	80	42	18.09	3,000
Granite milepost marked "18," center of	34	01	45.44	80	42	14.23	2,496
Copper nail in hub, east of road, 50 feet north of forks, 36 feet northeast to "U. S." on oak tree, 70 feet northwest to "U. S." on pine tree	34	01	20.91	80	42	10.56	2,500
Leasburg, 150 feet south of store, 30 feet southwest of T road west, 2 feet north of fence; iron post stamped "Prim. Trav. Sta. No. 71, 1918 H"	34	00	52.00	80	42	02.94	2,992
Copper nail in hub, south of road, on top of hill, 0.25 mile west of store	34	00	51.10	80	42	45.94	3,705
Copper nail in log, north of road, 20 feet north of forks, 14 feet west of pump	34	00	54.96	80	43	18.68	2,698
Copper nail in log, northwest of road, on bank, 5 feet west to nail in snag	34	00	42.45	80	43	40.76	2,249
Columbia, 19 miles from, center of milestone	34	00	30.82	80	43	55.26	1,694
Copper nail in hub, west of road, 30 feet west to blaze on pine stump	34	00	19.50	80	44	08.14	1,575
Andrew Campbell's grist mill, 150 feet south of, 40 feet southwest of forks, 250 feet southwest of bridge over Colonels Creek; iron post stamped "Prim. Trav. Sta. No. 72, 1918 H"	33	59	56.80	80	44	32.73	3,090
Columbia, 18 miles from, center of milestone	33	59	54.93	80	44	38.54	520
Copper nail in hub, north of road, near cabin, 177 feet west of "U. S." on hickory tree	33	59	44.02	80	45	06.62	2,683
Cement post, on south side of road, marked "14–11"	33	59	36.94	80	45	42.00	2,982
Copper nail in hub, on south bank of cut, 12 feet southwest to "U. S." on oak tree, 78 feet northeast to "U. S." on oak tree	33	59	47.86	80	46	28.60	4,076
Columbia, 16 miles from, 4 feet east of milepost, on south side of road, near drain crossing road; iron post stamped "Prim. Trav. Sta. No. 73, 1918 H"	33	59	50.91	80	46	36.43	728

From iron post No. 59 to iron post No. 59 around border of the range—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in hub, south of road, 15 feet northeast of "U. S." on pine tree, 29 feet southwest of "U. S." on pine tree	33	59	55.82	80	47	06.47	2,579
Columbia, 15 miles from, on south side of road; center of granite post	34	00	02.54	80	47	37.13	2,588
Copper nail in hub, on south edge of road, 21 feet southwest of "U. S." on pine tree, 27 feet southeast of "U. S." on pine tree	33	59	59.38	80	48	03.50	2,326
Union School, 110 feet southeast of, on north side of road; iron post stamped "Prim. Trav. Sta. No. 74, 1918 H"	33	59	46.40	80	48	51.97	4,287
Copper nail in hub, at southeast corner of crossroads, 900 feet west of Union School	33	59	42.13	80	49	01.35	900
Columbia, 13 miles from, south of road; center of granite post	33	59	22.26	80	49	29.87	3,134
Columbia, 12.5 miles east of, on south edge of road; iron post stamped "Prim. Trav. Sta. No. 75, 1918 H"	33	59	16.35	80	50	02.10	2,780
Copper nail in hub, north of road, 5 feet southwest of "U. S." on pine tree	33	59	31.44	80	50	29.84	2,790
Copper nail in hub, south of road, opposite T road north, 25 feet northwest to "U. S." on pine tree	33	59	33.38	80	50	53.75	2,022
Copper nail in hub, south of road, 12 feet south to "U. S." on oak tree, 30 feet east to "U. S." on pine tree	33	59	24.66	80	51	27.28	2,958
Browns Chapel School, 100 feet south of, on north side of road. 30 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 76, 1918 H"	33	59	25.44	80	51	58.12	2,596
Columbia, 10 miles from, on south side of road, center of granite post	33	59	19.15	80	52	30.63	2,809
Copper nail in hub, on south side of road, 61 feet southeast of "U. S." on gum tree, 62 feet west of "U. S." on oak tree	33	59	10.38	80	53	01.65	2,757
Columbia 9-mile post, 300 feet east of, 60 feet south of new house, on north side of road; iron post stamped "Prim. Trav. Sta. No. 77, 1918 H"	33	59	07.38	80	53	27.77	2,220
Copper nail in hub, north of road, 57 feet south to "U. S." on pine tree, 98 feet east to "U. S." on hickory tree	33	59	00.01	80	54	00.81	2,878
Copper nail in hub, north of road, 28 feet southwest to "U. S." on fence post, 24 feet southeast to "U. S." on gatepost	33	58	52.26	80	54	32.84	2,808
Copper nail in hub, north of road, at northwest corner of T road north, 35 feet southwest to "U. S." on pine tree, 15 feet southeast to "U. S." on oak tree	33	58	47.84	80	55	04.84	2,731
Columbia, 8 miles east of, at northwest corner of crossroads, 800 feet west of milepost 8; iron post stamped "Prim. Trav. Sta. No. 78, 1918 H"	33	58	41.56	80	55	46.74	3,585
Concrete post on north side of road, marked "5," center of	33	58	32.12	80	56	10.33	2,205
Granite post on south side of road, at forks, marked "6," center of	33	58	34.24	80	56	38.02	2,343
Railroad crossing, east of forks, near center of road, joint of east rail	33	58	29.67	80	57	21.41	3,682
Church, center of road opposite	33	58	44.80	80	57	39.53	2,161
Columbia, 5 miles east of, south side of Garners Ferry road, on top of hill near east end of deep cut, on bank; iron post stamped "Prim. Trav. Sta. No. 79, 1918 H"	33	59	06.07	80	58	11.91	3,471
Gills Creek, east pier of bridge over, on Garners Ferry road	33	59	21.84	80	58	26.89	2,032
John C. Lott's office, in front of, corner of east wing wall of culvert	33	59	37.53	80	58	52.76	2,694
Intersection of roads, 35 feet southeast to Firestone sign, 30 feet southwest to crossing sign	33	59	48.28	80	59	15.22	2,182
Intersection of highway and street-car track, center of road, 3 feet west of west rail, 43 feet northeast to "U. S." on telephone pole, 35 feet northwest to "U. S." on transmission line pole	34	00	04.78	80	59	10.24	.....
Intersection of highway and street-car track, in road; joint of south rail, 30 feet east to crossing sign	34	00	02.54	80	58	31.41	3,276
Copper nail in hub, on north edge of road, opposite T road south, 21 feet west of north end of culvert	34	00	28.69	80	58	13.28	3,053

From station 1007 to English post office.

Copper nail in hub, south of road, 36 feet south to "U. S." on telephone pole, 15 feet northwest to nail in pine tree	34	01	29.01	80	56	33.48	2,708
Columbia, 6.5 miles east of, at junction of wire road and Ancrum Ferry road; iron post stamped "Prim. Trav. Sta. No. 80, 1918 H"	34	01	36.39	80	56	08.03	2,270
Copper nail in hub, on south side of road, 50 feet west of Red Cross building, 34 feet southwest of "U. S." on telephone pole	34	01	24.10	80	55	39.08	2,735
Jackson, U. S. C. &. G. S. triangulation station, on highest part of hill, about 0.25 mile south of base hospital at Camp Jackson, 8.63 meters northwest from middle of water tank, marked "Z 601," at southwest corner of base of tank; tablet in concrete; reference distance 9.83 meters	34	01	13.44	80	55	16.27	2,205
U. S. C. & G. S. value	34	01	13.44	80	55	16.27	.....
Copper nail in hub, south of road, 6 feet west of danger sign	34	01	03.33	80	54	51.58	2,313

From station 1007 to English post office—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in cedar stump, south of road, 37 feet southeast to blazed oak tree, 24 feet northeast to blazed oak tree	34	01	06.97	80	54	36.52	1,323
Copper nail in pine stump, south of road	34	01	11.01	80	54	25.39	1,018
Copper nail in hub, south of road, at forks, 30 feet southeast to "U. S." on pine tree, 37 feet north to "U. S." on haw tree	34	01	21.54	80	53	44.61	3,594
Base Hospital, 2 miles east of, on north side of road, 20 feet southwest to "U. S." on oak tree, 20 feet east to "U. S." on pine tree; iron post stamped "Prim. Trav. Sta. No. 81, 1918 H"	34	01	26.86	80	53	33.95	1,044
Copper nail in hub south of road, 4 feet southwest to "U. S." on pine tree bearing range sign marked "O 4 C"	34	01	28.98	80	53	03.04	2,610
Copper nail in hub, south of road, 7 feet southeast to "U. S." on pine tree, 14 feet north to "U. S." on pine tree	34	01	28.44	80	52	32.16	2,600
Copper nail in stump, south of road, 20 feet north of "U. S." marked on fence post at northeast corner of J. B. Davis's yard	34	01	37.45	80	52	03.45	2,583
Copper nail in hub, south of road, 30 feet south of "U. S." marked on oak tree, 73 feet southwest of "U. S." on pine tree	34	01	44.85	80	51	33.50	2,229
Center pole of roof to Cox's tower	34	01	47.57	80	51	47.65	.....
Copper nail in hub, south of road, 27 feet north to "U. S." on pine tree, 23 feet northwest to "U. S." on pine tree	34	01	51.25	80	51	05.40	.....
Camp Jackson Base Hospital, 4.5 miles east of, on north side of road, on top of low hill; iron post stamped "Prim. Trav. Sta. No. 82, 1918 H"	34	01	56.00	80	50	42.45	1,990
Copper nail in hub, at northeast corner of crossroads	34	01	56.83	80	50	29.25	1,114
Copper nail in hub, south of road, 20 feet west of crossroads, 15 feet northwest of concrete milepost on south side of road, 45 feet southwest of concrete milepost north of road	34	02	00.97	80	49	57.33	2,717
Copper nail in hub, on north edge of road	34	02	06.77	80	49	30.98	2,293
Copper nail in hub, 49 feet southwest of "U. S." on house, 45 feet southeast of "U. S." on house	34	02	04.85	80	49	04.47	2,241
Copper nail in hub, on north side of road, 7 feet southwest of nail in oak tree, 49 feet northeast of nail in oak tree	34	02	10.36	80	48	50.56	1,296
Old store, 75 feet east of, on north side of road, 20 feet east of forks; iron post stamped "Prim. Trav. Sta. No. 83, 1918 H"	34	02	12.51	80	48	27.49	1,954
Copper nail in hub, south of road, 43 feet south of "U. S." on gum tree, 37 feet west of "U. S." on oak tree	34	02	06.62	80	48	05.12	1,975
Copper nail in stump, south of road, 5 feet east of "U. S." on gum tree	34	02	13.82	80	47	29.37	3,095
Copper nail in hub, on south side of road, 14 feet west of "U. S." on oak tree, 35 feet east of "U. S." on oak tree	34	02	16.81	80	47	11.18	1,559
Copper nail in hub, on north side of road, 25 feet north of two blazed persimmon trees	34	02	22.77	80	46	51.72	1,744
Columbia, 16 miles from, 800 feet east of milepost, on south edge of road; iron post stamped "Prim. Trav. Sta. No. 84, 1918 H"	34	02	24.52	80	46	05.82	3,867
Copper nail in hub, on south edge of road	34	02	24.11	80	45	44.28	1,813
Copper nail in hub, on south edge of road, 5 feet north of end of rail fence	34	02	30.29	80	45	24.49	1,778
Copper nail in hub, on north edge of road, 22 feet north of milepost 17	34	02	33.06	80	45	15.46	810
Copper nail in hub, on north edge of road, 22 feet west of "U. S." on oak tree, 20 feet northeast of "U. S." on oak tree	34	02	48.98	80	44	44.06	3,095
Columbia, 18 miles from, 900 feet east of milepost, on south side of road; iron post stamped "Prim. Trav. Sta. No. 85, 1918 H"	34	03	09.38	80	44	17.12	3,063
Copper nail in hub, on north edge of road, 25 feet northwest to "U. S." on oak tree	34	03	30.15	80	43	47.32	3,271
Copper nail in hub, on south edge of road	34	03	47.96	80	43	25.02	2,600
Copper nail in hub, at northeast corner of crossroads, 30 feet northwest of "U. S." on oak tree, 25 feet northeast of "U. S," on gum tree	34	03	56.15	80	43	16.41	1,100
Granite milepost marked "20"	34	04	11.96	80	42	46.16	3,005
Copper nail in hub, on south edge of road, 25 feet southwest of "U. S." on gum tree, 6 feet northwest of "U. S." on oak tree	34	04	25.62	80	42	36.57	2,152

From bench mark 80 to county-line stone on wire road.

Copper nail in hub, south of road, 10 feet east of forks, 25 feet southeast of "U. S." on pine tree	34	01	48.94	80	55	35.99	2,977
Copper nail in hub, at northeast corner of T road north, 2 feet south of "U. S." on corner fence post	34	02	09.30	80	55	17.28	2,590
Copper nail in hub, on south edge of road, 3 feet north of "U. S." on telephone pole	34	02	14.58	80	54	49.37	2,408
Copper nail in hub, south of road, 12 feet north of "U. S." on oak tree, 20 feet west of "U. S." on gum tree	34	02	26.64	80	54	27.37	2,218
Copper nail in hub, south of road, 35 feet southeast of "U. S." on oak tree, 25 feet west of "U. S." on pine tree	34	02	47.98	80	53	58.43	3,253
Copper nail in hub, north of road, 30 feet east of forks, 25 feet northwest of "U. S." on gum tree	34	03	00.06	80	53	37.45	2,147
Copper nail in hub, north of road, 5 feet southeast of "U. S." on cedar tree	34	03	07.79	80	53	27.30	1,158

From bench mark 80 to county-line stone on wire road—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in hub, north of road, 7 feet south of "U. S." on pine tree	34	03	10.50	80	53	17.13	900
Copper nail in hub, south of road, 54 feet east of nail in hackberry tree	34	03	07.05	80	52	44.48	3,020
Copper nail in hub, south of road, 8 feet north of "U. S." on hickory tree	34	03	10.51	80	52	20.34	1,811
Copper nail in hub, north of road, 5 feet south of telephone pole marked "U. S."	34	03	12.33	80	51	46.88	2,823
Copper nail in hub, 25 feet northwest of milepost 12	34	03	10.60	80	51	19.98	2,267
Copper nail in hub, south of road, 14 feet west of "U. S." on telephone pole	34	03	06.67	80	50	49.32	2,610
Copper nail in hub, south of road, 25 feet northwest of milepost 15–16, 30 feet west of "U. S." on telephone pole	34	03	05.60	80	50	24.42	2,095
Copper nail in hub, north of road, 5 feet southwest of "U. S." on telephone pole	34	03	11.53	90	50	05.39	1,709
Copper nail in hub, south of road, at crossroads, 14 feet east of "U. S." on oak tree, 25 feet west of "U. S." on oak tree	34	03	10.79	80	49	51.39	1,178
Copper nail in hub north of road at forks, 30 feet southeast of "U. S." on oak	34	03	17.47	80	49	30.69	1,868
Milepost marked "14," center of	34	03	22.97	80	49	14.65	1,460
Copper nail in hub, at northwest corner of crossroads, 35 feet southwest of "U. S." on oak tree, 30 feet northwest of "U. S." on telephone pole	34	03	32.74	80	49	00.70	1,536
Copper nail in hub, at northeast corner of crossroads, 3 feet south of mail box	34	03	43.44	80	48	40.02	2,047
Copper nail in hub, north of road, 12 feet west of "U. S." on oak tree	34	03	53.15	80	48	08.08	2,860
Copper nail in hub, south of road, 18 feet west of "U. S." on oak tree, 12 feet northeast of "U. S." on oak tree, 25 feet southeast of "U. S." on telephone pole	34	03	57.41	80	47	35.86	2,744
Copper nail in hub, east of road, 60 feet northeast of concrete bridge, 93 feet southeast of blazed gum tree near Messers mill	34	04	16.63	80	47	07.87	3,053
Copper nail in hub, east of road, 37 feet south of "U. S." on telephone pole, 29 feet east of blazed oak tree	34	04	51.00	80	47	10.04	3,479
Copper nail in hub, east of road, 8 feet southwest of "U. S." on telephone pole, 25 feet northeast of blazed oak tree	34	05	15.70	80	47	04.92	2,520
Copper nail in hub, west of road, 30 feet west of blazed oak tree	34	05	39.21	80	46	57.89	2,472

From copper-nail station 1622 to bench mark 65. (By P. W. McMillen in 1918.)

Copper nail in hub, west side of road, 7 feet southeast of "U. S." on oak tree, 15 feet northeast of "U. S." on oak tree	34	05	10.68	80	47	19.48	2,142
Copper nail in hub, east side of road, 20 feet northwest of "U. S." on oak tree, 23 feet northeast of "U. S." on pine tree	34	05	33.68	80	47	16.09	2,343
Copper nail in hub, east side of road, 68 feet southeast of "U. S." on oak, 58 feet north of "U. S." on pine tree	34	05	59.86	80	47	33.18	3,010

From copper-nail station 1192 to copper-nail station 1606. (By P. W. McMillen in 1918.)

Copper nail in hub, west side of road, 11 feet east of "U. S." on pine tree	34	06	03.58	80	48	34.15	1,646
Copper nail in hub, east side of road, 14 feet southwest of "U. S." on pine tree, 30 feet east of "U. S." on pine tree	34	05	31.05	80	48	36.02	3,292
Copper nail in hub, west side of road, 30 feet northeast of "U. S." on gate post	34	05	20.33	80	48	44.34	1,289
Copper nail in hub, west side of road, 18 feet northwest of "U. S." on oak tree, 55 feet southwest of "U. S." on oak tree	34	04	50.58	80	49	05.43	3,493
Copper nail in floor of bridge over spillway to dam, opposite mill door	34	04	29.86	80	49	16.00	2,276
Copper nail in hub, west of road, 25 feet west of "U. S." on pine tree, 25 feet northwest of "U. S." on pine tree	34	04	06.66	80	49	15.36	2,346
Copper nail in stump, east of road, 8 feet west of "U. S." on pine tree, 12 feet south of "U. S." on pine tree	34	03	45.80	80	49	09.21	2,173

From bench mark 64 to copper-nail station 1597.

Copper nail in hub, west side of road, 23 feet southeast of "U. S." on pine tree, 50 feet southwest of "U. S." on gatepost	34	05	36.92	80	49	43.23	3,731
Copper nail in hub, west side of road, at forks, 20 feet southwest of "U. S." on oak tree, 47 feet northeast of "U. S." on oak tree	34	05	06.89	80	49	49.34	3,079
Copper nail in hub, west side of road, at forks, 25 feet north of "U. S." on pine tree, 25 feet east of "U. S." on oak tree	34	04	45.92	80	50	01.72	2,360

From bench mark 64 to copper-nail station 1597—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in hub, at southeast corner of crossroads, 20 feet northeast of "U. S." on pine tree, 43 feet northwest of "U. S." on gum tree	34	04	18.23	80	49	55.10	2,855
Copper nail in hub, west side of road, 8 feet southwest of "U. S." on post at southwest corner of W. Hannwood's house	34	03	52.16	80	50	03.28	2,722
Copper nail in hub, in trinagle of road forks, 25 feet west of "U. S." on oak tree, 45 feet northeast of "U. S." on oak tree	34	03	26.34	80	50	11.68	2,706

From copper-nail station 1592 to copper-nail station 1071.

Copper nail in hub, at forks, 16 feet southwest of "U. S." on stump, 18 feet east of "U. S." on oak tree	34	03	31.15	80	51	38.06	2,577
Copper nail in hub, at forks, 40 feet north of bridge over spillway of Brazels Mill, 50 feet west to "U. S." on oak tree	34	03	37.96	80	51	59.40	1,921
Copper nail in hub, north edge of road, 10 feet east to blazed oak tree, 30 feet south west to "U. S." on pine tree	34	03	49.42	80	51	41.91	1,874
Copper nail in hub, at northwest corner of crossroads	34	04	01.09	80	51	04.38	3,370
Copper nail in hub, at southeast corner of crossroads, 19 feet southeast of two blazed pine trees	34	04	29.30	80	51	13.02	2,943
Copper nail in hub, on west edge of road, 19 feet southeast of "U. S." on oak tree, 85 feet northwest of "U. S." on pine tree	34	04	55.83	80	51	07.35	2,724

From copper-nail station 1818 to copper-nail station 1596.

Copper nail in hub, west of road, 12 feet northeast of "U. S." on pine tree, 15 feet northeast to "U. S." on oak tree	34	03	35.02	80	50	38.72	3,406
Copper nail in stump, west of road, 15 feet west to blazed elm tree, 25 feet south to blazed elm tree	34	03	21.21	80	50	28.70	1,631

From copper-nail station 1576 to bench mark 62.

Copper nail in hub, west side of road, 17 feet east of "U. S." on pine tree, 42 feet northwest of "U. S." on pine tree	34	03	23.51	80	53	19.35	1,330
Copper nail in hub, north side of road, 16 feet west of "U. S." on pine tree, 11 feet south of "U. S." on pine tree	34	03	53.24	80	53	00.97	3,379
Copper nail in hub, west side of road, 23 feet southwest of "U. S." on pine tree, 17 feet southeast of "U. S." on pine tree	34	04	18.01	80	52	55.91	2,540

From copper-nail station 1875 to copper-nail station 1930.

Copper nail in hub, north side of road, 31 feet southeast of "U. S." on oak tree, 34 feet northeast of "U. S." on pine tree	34	03	30.59	80	53	53.25	2,943
Copper nail in hub, west side of road, 11 feet south of "U. S." on pine tree, 10 feet north of "U. S." on pine tree	34	03	41.57	80	54	11.38	1,887

From copper-nail station 1805 to copper-nail station 1059.

Copper nail in hub, east of road, at northwest corner of field, 35 feet north of nail in pine tree, 12 feet west of nail in oak tree	34	03	53.24	80	52	19.62	2,298
Copper nail in hub, east of road, 250 feet north of church, 15 feet south of "U. S." in pine tree, 6 feet west of "U. S." in oak tree	34	04	00.76	80	52	42.02	2,032
Copper nail in hub, west of road, 25 feet southwest of forks, 14 feet southeast to "U. S." on pine tree, 12 feet northeast to "U. S." on pine tree	34	04	12.15	80	52	38.47	1,192
Copper nail in hub, east of road, 28 feet southeast of "U. S" on gum tree, 17 feet south of "U. S." on gum tree	34	04	32.09	80	52	40.52	2,025
By L. F. Biggs in 1918.							
Copper nail in root of pine tree painted "P. T. 1"	34	02	45.52	80	44	04.46	.....
Copper nail in root of pine stump, 30 feet west of road, painted "U. S. P. T. 2"	34	02	21.32	80	43	47.87	2,816
Copper nail in hub, west side of road, 42 feet southwest of tree marked "U. S. P. T. 3"	34	02	13.39	80	43	29.93	1,709
Copper nail in log, east side of road, painted "U. S. P. T. 4"	34	01	55.38	80	42	59.62	3,134
Copper nail in stump, west side of road, 200 feet south of stream, near tree painted "U. S. P. T"	34	01	23.88	80	42	57.78	3,187
Copper nail in pine tree at crossroads, painted "U. S. P. T. 6"	34	01	08.01	80	42	31.86	2,707

From copper-nail station 3011 to Shady Grove. (By L. F. Biggs in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in root of pine tree, 40 feet north of forks at house, tree painted "U. S. P. T. 7"	34	02	35.94	80	43	38.64	2,394
Copper nail in root of pine tree, east of road, tree painted "U. S. P. T. 8"	34	02	48.67	80	43	25.37	1,703
Copper nail in root of china tree, 20 feet north of cabin, tree painted "U. S. P. T. 9"	34	03	03.26	80	43	11.55	1,876
Copper nail in root of stump, west of road, at house, tree painted "U. S. P. T. 10"	34	03	20.55	80	43	04.28	1,852
Copper nail in root in road, 12 feet west of stump, tree painted "U. S. P. T. 11"	34	03	45.90	80	43	12.89	2,661
From copper-nail station 1476 to copper-nail station 1246.							
Copper nail in hub, in trail, 240 feet south of stream crossing, near oak tree, painted "U. S. P. T. 12"	34	02	00.83	80	45	05.58	3,362
Hickory tree, west of road, painted "U. S. P. T. 13"	34	01	45.11	80	44	52.63	1,926
Copper nail in hub, northeast of road, 200 feet east of forks, near oak tree painted "U. S. P. T. 14"	34	01	34.17	80	44	42.25	1,407
Corner of picket fence at house, near oak tree painted "U. S. P. T. 15"	34	01	32.25	80	44	16.09	2,211
Copper nail in root of oak tree, at stream crossing, near oak tree painted "U. S. P. T. 16"	34	01	04.00	80	43	54.46	3,387
From Ancrum Ferry road to Kaufman School.							
Copper nail in base of pine tree, east of road, painted "U. S. P. T. 17"	34	02	02.63	80	45	47.93	2,676
Copper nail in base of pine tree, east of road, at sharp angle to south painted "U. S. P. T. 18"	34	01	48.08	80	46	09.34	2,326
Copper nail in base of pine tree, west of road, painted "U. S. P. T. 19"	34	01	25.83	80	46	10.89	2,252
Copper nail in hub, south of road, 9 feet west of oak tree, painted "U. S. P. T. 20"	34	01	17.47	80	46	20.18	1,149
Copper nail in base of pecan tree, 160 feet west of road, 20 feet north of crossroads, painted "U. S. P. T. 21"	34	01	07.14	80	46	47.56	2,530
Copper nail in stump, in field, 250 feet northeast of house, painted "U. S. P. T. 22"	34	00	29.54	80	47	07.90	4,168
From Union School to Ancrum Ferry road.							
Copper nail in base of oak tree, painted "U. S. P. T. 24"	34	00	09.49	80	49	14.72	2,983
Copper nail in base of oak tree, at forks, painted "U. S P. T. 25"	34	00	38.58	80	49	17.51	2,950
Copper nail in base of pine tree, north of road, painted "U. S. P. T. 26"	34	00	54.85	80	49	22.43	1,694
Copper nail in stump, west of road, painted "U. S. P. T. 27"	34	01	13.34	80	49	41.78	2,478
Copper nail in base of cherry tree, west of road, at forks to mill, painted "U. S. P. T. 28"	34	01	28.25	80	49	50.63	1,682
From bench mark 72 to copper-nail station 3160.							
Cooper nail in base of gum tree, west of road, 100 feet northeast of house, painted "U. S. P. T. 29"	34	00	26.35	80	44	29.48	2,997
Copper nail in base of pine snag, 30 feet north of road, painted "U. S. P. T. 30"	34	00	51.18	80	44	29.36	2,511
Copper nail in root in road, pine tree east of road painted "U. S. P. T. 31"	34	01	13.49	80	44	46.69	2,686
Pine tree, 30 feet west of road, near forks to mill, painted "U. S. P. T. 32"	34	01	22.32	80	44	54.48	1,109
Copper nail in base of pine tree, 50 feet south of road, painted "U. S. P. T. 33"	34	01	31.55	80	45	17.66	2,164
Copper nail in stump, north of road, painted "U. S. P. T. 34"	34	01	32.66	80	45	47.35	2,500
From bench mark 73 to copper-nail station 3167.							
Copper nail in stump, west of road, painted "U. S. P. T. 35"	34	00	01.49	80	46	06.13	2,766
Copper nail in base of pine tree, 30 feet west of road, painted "U. S. P. T. 36"	34	00	18.75	80	45	54.37	2,005
Copper nail in stump, at forks, painted "U. S. P. T. 37"	34	00	35.76	80	46	03.57	1,887
Copper nail in base of oak tree, east of road, at forks on top of hill, painted "U. S. P. T. 38"	34	00	54.37	80	46	01.90	1,888

From copper-nail station 1622 to bench mark 85. (By P. W. McMillen in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in hub	34	04	23.24	80	47	09.15	2,802
Copper nail in base of oak tree, in road forks, marked "Elev. 229.4"	34	04	20.20	80	46	45.08	2,064
Copper nail in stump, 300 feet northwest of house, in cotton field	34	04	17.96	80	46	27.30	1,514
Copper nail in stump, north of road, 14 feet north of blazed stump, 14 feet northeast of blazed stump	34	04	13.48	80	46	16.54	1,012
Copper nail in hub, south of road, at northeast corner of field, 25 feet south to blazed pine tree, 25 feet northwest to blazed oak tree	34	03	58.70	80	45	51.50	2,581
Spike, in base of pine tree, south of road, 20 feet northeast of gate, elevation on gate "286.8"	34	03	58.64	80	45	21.45	2,528
Copper nail in hub, at northeast corner of crossroads, 18 feet northeast of blaze on oak tree, 26 feet southeast of blaze on pine tree	34	03	52.96	80	44	58.23	2,035
Copper nail in hub, east of road, 15 feet east of blaze on oak tree, 14 feet south of blaze on oak tree	34	03	25.54	80	44	47.54	2,914
Copper nail in hub, north of road, 100 feet north of church 45 feet northwest of blaze on oak tree, 30 feet south of blaze on oak tree	34	03	11.72	80	44	34.23	1,790

From copper-nail station 1993 to copper-nail station 1178.

Copper nail in hub, east of road, 20 feet east of blazed oak tree, 45 feet southwest of blaze on oak tree	34	04	30.50	80	46	04.53	2,299
Copper nail in hub, center of crossroads, 75 feet west of blaze on oak tree, 24 feet northeast of blaze on pine tree	34	04	49.46	80	45	31.98	3,347
Copper nail in hub, north of road, at forks, 20 feet southeast of corner fence post, 14 feet southwest of blaze on oak tree	34	05	05.69	80	45	17.81	2,028
Copper nail in hub, 20 feet north of road, at forks, 62 feet north of blaze on pine tree, 33 feet southeast of corner of sawmill	34	04	56.16	80	44	31.16	.....
Copper nail in hub, north of road, 16 feet northwest of chimney, 53 feet northeast of fence post	34	04	36.36	80	43	54.53	3,675
Copper nail in hub, north of road, at forks, 6 feet southwest of blaze on oak tree, 25 feet north of blaze on oak tree	34	04	09.64	80	43	33.44	3,232

From copper-nail station 2087 to copper-nail station 1178.

Copper nail in hub, south of road, at forks, 20 feet northeast of blaze on pine tree, 20 feet south of blaze on pine tree	34	04	53.55	80	43	44.80	2,290
Copper nail in hub, north of road, at forks	34	05	07.10	80	43	35.68	1,572

From copper-nail station 2102 to copper-nail station 1158.

Copper nail in hub, on west side of road, 12 feet northwest of blaze on pine stump	34	05	27.62	80	43	45.08	2,221
Copper nail in hub, on west side of road, 12 feet west of blaze on pine tree, 30 feet north of blaze on oak tree	34	05	58.90	80	43	34.50	3,285

From copper-nail station 2143 to copper-nail station 2065.

Copper nail in hub, on west side of road, 45 feet northwest of blaze on oak tree, 36 feet south of blaze on pine tree	34	05	51.28	80	44	04.17	2,612
Copper nail in hub, on west side of road, 18 feet northwest of blaze on oak tree, 30 feet east of blaze on stump	34	05	20.11	80	44	02.43	3,156
Copper nail in hub, on north side of road, 6 feet east of blaze on gum tree, 18 feet southwest of blaze on oak tree	34	04	57.72	80	44	13.36	2,444

From copper-nail station 2055 to copper-nail station 1141.

Copper nail in hub, 50 feet east of road, 12 feet southwest of southwest corner of northwest barn	34	05	23.97	80	44	53.38	2,252
Copper nail in hub, east of road, 15 feet south of creek, 5 feet west of blaze on gum tree, 15 feet southeast of blaze on gum tree	34	05	51.09	80	44	50.18	2,755

From copper-nail station 2053 to bench mark 66.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in hub, on west side of road, 10 feet north of blaze on oak tree, 37 feet southwest of blaze on oak tree	34	05	23.85	80	45	43.38	2,827
Copper nail in hub, on west side of road, 12 feet northeast of blaze on pine tree, 25 feet southwest of blaze on pine tree	34	05	42.54	80	45	56.66	2,194

From copper-nail station 2050 to copper-nail station 1490.

Copper nail in stump, west of road, 6 feet northwest of blaze on oak tree, 20 feet southwest of blaze on oak tree	34	04	21.86	80	45	24.33	2,862
Copper nail in hub, on east side of road, at forks, 25 feet east of "U. S." on gatepost	34	04	04.25	80	45	02.86	2,536
Copper nail in hub, on east side of road, 5 feet northwest of blaze on gum tree, 15 feet southeast of blaze on oak tree	34	04	11.08	80	44	30.68	2,795
Copper nail in stump, northeast corner of crossroads, 5 feet south of blaze on oak tree, 30 feet north of blaze on gum tree	34	04	19.79	80	44	07.53	2,136
Copper nail in hub, east side of road, 15 feet southeast of blaze on oak tree, 25 feet east of blaze on pine tree	34	03	53.99	80	44	00.52	2,674

From copper-nail station 1616 to bench mark 84.

Copper nail in hub, on south side of road, 8 feet north of blaze on oak tree, 20 feet southwest of blaze on oak tree	34	03	45.83	80	46	57.74	3,413
Copper nail in hub, on east side of road, 18 feet northeast of blaze on hickory tree, 10 feet west of blaze on oak tree	34	03	31.68	80	46	45.76	1,750
Copper nail in hub, west side of road, 14 feet southeast of blaze on oak tree	34	03	07.14	80	46	27.28	2,929
Copper nail in hub, on east side of road, 30 feet north of forks, 8 feet east of blaze on oak tree	34	02	59.17	80	46	15.38	1,285

From copper-nail station 1459 to copper-nail station 1436.

Copper nail in hub, on east side of road, 15 feet northeast of blaze on oak tree, 25 feet northwest of blaze on oak tree	34	02	28.22	80	47	58.72	2,108
Copper nail in hub, on east side of road at forks, 14 feet east of blaze on pine tree, 20 feet northwest of blaze on oak tree	34	02	49.13	80	48	00.94	2,121
Copper nail in hub, on north side of road, 15 feet east of blaze on pine tree, 18 feet northwest of blaze on oak tree	34	03	01.47	80	48	18.67	1,944
Copper nail in hub, south side of road, 50 feet south of blaze on oak tree, 40 feet northeast of blaze on gum tree	34	03	10.44	80	48	43.95	2,313
Copper nail in hub, on north side of road, 40 feet northeast of blaze on pine tree, 45 feet west of blaze on oak tree	34	03	10.89	80	49	00.17	1,366
Copper nail in hub, south of road, 20 feet south of blaze on oak tree, 25 feet southeast of blaze on oak tree	34	03	03.29	80	49	20.12	1,847
Copper nail in hub, on south side of road, 6 feet northeast of blaze on pine tree, 25 feet south of blaze on oak tree	34	02	44.14	80	49	47.66	3,020
Copper nail in hub, on south side of road, at forks, 40 feet south of blaze on oak tree, 20 feet west of blaze on oak tree	34	02	25.80	80	50	09.73	2,623
Copper nail in hub, on west side of road, in center of triangle formed by three blazed oak trees	34	02	24.19	80	50	29.12	1,640
Copper nail in hub, on east side of road, 6 feet northwest to pine stump, 16 feet southwest of blaze on oak tree	34	02	39.41	80	50	53.13	2,540
Copper nail in hub, on west side of road at forks, 25 feet north of blaze on oak tree, 20 feet south of blaze on oak tree	34	02	32.36	80	51	17.76	2,193
Copper nail in hub, on west side of road, 12 feet northwest of blaze on oak tree, 35 feet northeast of blaze on pine tree	34	02	05.88	80	51	21.61	2,707

From copper-nail station 1459 to copper-nail station 1436.

Copper nail in hub, on west side of road, in line with south end of house, 20 feet east of wire fence	34	00	06.43	80	50	54.13	3,340
Copper nail in hub, on east side of road, 35 feet north of crossroads	34	00	28.01	80	50	44.06	2,341
Copper nail in hub, 15 feet north of right-angle turn in road, 30 feet north of blaze on pine tree	34	01	02.93	80	50	27.98	3,779
Copper nail in hub, 40 feet west of road, 160 feet southwest of house	34	01	25.34	80	50	19.30	2,379
Copper nail in hub, on north side of road, 50 feet east of forks	34	01	48.02	80	50	06.49	2,532

From bench mark 83 to copper-nail station 3171. (By L. F. Biggs in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in base of pine tree, 110 feet west of road, painted "U. S. P. T. 39"	34	01	48.29	80	48	06.92	3,500
Copper nail in stump, on south side of road, near tree, painted "U. S. P. T. 40"	34	01	35.57	80	47	36.19	2,888
Tree west of road, in front of vacant house, painted "U. S. P. T. 41"	34	01	26.51	80	47	11.83	2,247
From Ancrum Ferry road southward.							
Copper nail in root of pine tree, 30 feet south of road, at south edge of clearing, painted "U. S. P. T. 42"	34	01	55.16	80	47	21.51	2,000
Copper nail in root of pine tree, east of road, at forks, painted "U. S. P. T. 43"	34	01	50.80	80	46	51.06	2,600
Copper nail in root of oak tree, north side of road, west of stream, painted "U. S. P. T. 45"	34	01	35.77	80	46	37.07	1,924
From milepost 15 to bench mark 83. (By P. W. McMillen in 1918.)							
Copper nail in hub, on west side of road, 4 feet north of blaze on pine tree, 8 feet northwest of blaze on pine tree	34	00	16.12	80	48	03.66	2,764
Copper nail in hub, on north side of road, at crossroads, 14 feet southeast of blaze on oak tree, 12 feet northwest of blaze on oak tree	34	00	38.30	80	48	12.41	2,360
Copper nail in hub, on east side of road, at forks, 8 feet northwest of blaze on oak tree, 10 feet southeast of blaze on oak tree	34	01	03.25	80	48	15.64	2,537
Copper nail in hub, west of road, 25 feet north of blaze on pine tree, 25 feet northeast of blaze on oak tree	34	01	29.76	80	48	04.18	2,850
Copper nail in hub, on west side of road, 10 feet north of oak tree, 25 feet southwest of blaze on oak tree	34	01	54.63	80	48	10.70	2,573
From copper-nail station 1984 to copper-nail station 1670.							
Copper nail in hub, south of road, 10 feet northeast of blaze on oak tree, 15 feet south of blaze on oak tree	34	04	14.65	80	47	31.18	1,970
Copper nail in hub, on south side of road, 16 feet west of creek, 8 feet north of blaze on pine tree, 20 feet west of blaze on pine tree	34	04	21.35	80	47	52.94	1,952
Copper nail in stump, in open field, 120 feet southeast of gate, 3 feet southwest of oak tree	34	04	31.08	80	48	09.43	1,700
Copper nail in hub, east of road, 14 feet southeast of corner of yard fence	34	05	06.25	80	48	08.22	3,559
Copper nail in hub, on north side of road, 50 feet west of gate	34	05	17.48	80	48	33.01	2,373
Copper nail in stump of telegraph pole, east of railroad, 150 feet south of road crossing	33	58	52.53	80	57	22.10	.....
East end of concrete-tile drain	33	59	15.78	80	57	20.58	2,353
Level bench mark, copper nail in west end of switch tie opposite switch stand. Elevation, 199.3	33	59	43.51	80	57	15.73	2,834
Copper nail in hub, west of road, 5 feet south of blazed pine tree, 6 feet northeast to blaze on pine tree	34	00	08.04	80	57	02.74	2,709
Copper nail in base of trolley-line pole between car tracks	34	00	38.99	80	56	44.44	3,486
Copper nail in west curb of concrete road, 20 feet north of T road west	34	00	55.41	80	56	26.43	2,247
From bench mark 74 to copper-nail station 2820.							
Copper nail in hub, south of road, 6 feet north of blaze on persimmon tree, 10 feet south of blaze on oak tree	33	59	57.32	80	49	16.04	1,972
Copper nail in hub, on north side of road, 30 feet southeast of blaze on persimmon tree, 40 feet northeast of blaze on pine tree	34	00	17.80	80	49	41.60	2,985
Copper nail in hub, on north side of road, 12 feet northwest of blaze on oak tree, 20 feet southeast of blaze on oak tree	34	00	28.95	80	50	04.32	2,220
Copper nail in hub, north of road, 5 feet south of blaze on pine tree, 22 feet west of blaze on gum tree	34	00	40.00	80	50	35.96	2,890
Copper nail in hub, south of road, 25 feet southeast of blaze on oak tree, 14 feet southwest of blaze on oak tree	34	00	40.24	80	51	02.55	2,240

From copper-nail station 1434 to bench mark 65.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in hub, west of road, at top of small hill	34	01	17.00	80	52	07.57	2,095
Copper nail in hub, west of road, 8 feet southeast of blaze on oak tree, 20 feet southwest of blaze on oak tree	34	01	00.65	80	51	54.05	2,008
Copper nail in hub, north of road, at forks, 25 feet southeast of blaze on oak tree, 14 feet north of blaze on oak tree	34	00	49.87	80	51	35.15	1,926
Copper nail in hub, at north corner of crossroads	34	00	11.69	80	51	18.38	
Copper nail in hub, north of road, 30 feet east of dead pine tree, 40 feet north of pine tree in field	33	59	47.26	80	51	50.40	3,655

From bench mark 78 to Coast Survey station Jackson.

Copper nail in hub, west of road, 40 feet north of forks, 25 feet southwest of blaze on oak tree, 25 feet northwest of blaze on oak tree	33	59	09.64	80	56	04.10	3,194
Copper nail in hub, east of road, 4 feet east of gatepost at entrance to remount area	33	59	31.52	80	56	03.85	2,212
Copper nail in hub, east of road, opposite T road west	33	59	08.72	80	55	10.80	5,026
Copper nail in hub, east of road, at forks, 17 feet southwest of blaze on hickory tree, 14 feet north of blaze on hickory tree	33	59	30.87	80	54	44.19	2,640
Copper nail in hub, west of road, 5 feet west of stump, 15 feet northwest of blaze on fence post	33	59	49.21	80	55	06.52	2,126
Copper nail in hub, 100 feet north of road, 52 feet north of blaze on pine tree, 55 feet southeast of blaze on stump	34	00	12.35	80	55	23.21	2,730
Copper nail in hub, east of road, 16 feet northwest of blaze on oak tree, 18 feet southwest of blaze on oak tree	34	00	39.89	80	55	21.51	2,787

From copper-nail station 1434 to copper-nail station 1558.

Copper nail in hub, west of road, 15 feet west of blaze on oak tree, 11 feet northeast of blaze on oak tree	34	01	44.81	80	52	16.66	1,336
Copper nail in hub, north of road, opposite T road south, 18 feet northwest of blaze on oak tree	34	02	06.81	80	52	08.27	2,229
Copper nail in hub, north of road, 16 feet east of blaze on oak tree, 20 feet northwest of blaze on oak tree	34	02	03.51	80	52	42.90	2,100
Copper nail in hub, on south side of pine tree, at northwest corner of crossroads. Elevation marked "336.1"	34	01	59.66	80	52	54.97	1,086
Copper nail in stump, south of road	34	02	00.94	80	53	16.07	1,780
Copper nail in stump, east of road, level bench mark "317.3"	34	01	50.50	80	53	46.89	2,800
Level bench mark on post, on southwest corner of bridge over outlet of pond. Elevation, 248.3	34	01	53.95	80	54	24.50	3,184

From copper-nail station 2755 to copper-nail station 1571.

Copper nail in hub, east of road, 10 feet southeast of blaze on pine tree, 35 feet east of blaze on pine tree	34	02	23.30	80	52	34.63	1,664
Copper nail in hub, at northeast corner of crossroads, 11 feet southwest of blaze on oak tree, 23 feet northwest of blaze on oak tree	34	02	37.05	80	52	47.59	1,766
Copper nail in hub, east of road, 31 feet southeast of blaze on pine tree, 13 feet north of blaze on oak tree	34	02	50.73	80	53	03.19	1,905
Copper nail in hub, south of road, 27 feet southwest of blaze on oak tree, 37 feet southeast of blaze on pine tree	34	02	51.66	80	53	18.96	1,330

From copper-nail station 2389 to copper-nail station 1608.

Copper nail in hub, east of road, 25 feet northwest of blaze on oak tree, 32 feet north of blaze on pine tree	34	03	14.06	80	48	12.88	1,473
Copper nail in hub, west of road, 14 feet southeast of blaze on oak tree 25 feet west of blaze on pine tree	34	03	30.31	80	48	27.77	2,066

From Coast Survey station Jackson to copper-nail station 1430. (By L. F. Biggs in 1918.)

Copper nail in root, in road near tree, painted "Elev. 319.3." U. S. P. T. 46	34	00	58.72	80	54	54.11	2,381
Copper nail in stump, near tree, painted "U. S. P. T. 5"	34	00	36.32	80	54	20.96	3,594
Copper nail in hub, north of road, near east end of clearing, painted "U. S. P. T. 48"	34	00	27.50	80	53	46.32	3,050

From Coast Survey station Jackson to copper-nail station 1430—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in hub, north of road, just west of gate to large house.	34	00	21.90	80	53	18.41	2,417
Copper nail in root, north of road. Elevation, 343.1	34	00	12.07	80	53	00.02	1,839
Copper nail in hub, north of road, at crossroads, near tree, painted "U. S. P. T. 50"	34	00	30.46	80	52	37.86	2,634
Copper nail in hub, east of road, near forks, near tree, painted "U. S. P. T. 52"	34	00	46.72	80	52	05.94	3,150
Copper nail in hub, north of road, at crossroads, near tree, painted "U. S. P. T. 53"	34	01	11.47	80	52	17.32	2,678

From U. S. primary traverse station 53 to U. S. primary traverse station 48.

Copper nail in hub, south of road, near tree, painted "U. S. P. T. 54"	34	01	07.14	80	52	45.30	2,394
Copper nail in hub, south of road, on top of hill, near tree, painted "U. S. P. T. 55"	34	01	03.34	80	53	10.99	2,195
Copper nail in hub, north of road, near tree, painted "U. S. P. T. 56"	34	00	56.84	80	53	41.30	2,634
Copper nail in hub, north of road, at forks, near tree	34	00	49.08	80	54	00.44	1,792

From copper-nail station 3480 to bench mark 77.

Copper nail in hub, east of road, 200 feet north of crossroads, opposite wire road north	33	59	55.31	80	53	13.82	2,052
Copper nail in hub, west of road, 200 feet south of field	33	59	29.92	80	53	22.01	2,655

From copper-nail station 2692 to copper-nail station 2657. (By P. W. McMillen in 1918.)

Copper nail in hub, 20 feet northwest of highway and street railway crossing, 35 feet north of corner of freight shed	33	59	41.41	80	56	22.53	1,863
Copper nail in stump, 15 feet north of street railway, opposite west door of freight house	33	59	44.56	80	56	39.11	1,432
Copper nail in trolley pole, 7 feet north of street-car track	33	59	48.67	80	57	03.23	2,071

From copper-nail station 2915 to Coast Survey station Jackson.

Copper nail in stump, west of road, opposite garbage disposal plant.	33	59	53.94	80	56	17.48	1,334
Copper nail in stump, in field, 15 feet south of road, 60 feet south of forks	34	00	01.49	80	56	16.12	768
Copper nail in stump, south of road, 30 feet east of forks	34	00	22.16	80	56	03.40	2,347
Copper nail in telephone pole, east of road, marked "U. S."	34	00	28.87	80	55	51.84	1,187
Copper nail in telephone pole, east of road, marked "U. S."	34	00	41.08	80	55	58.83	1,367
Level bench mark on southeast corner of bridge, marked "Elev. 244.9"	34	00	50.57	80	56	18.88	1,942
Nail in blaze on pine tree, at corner of fence, west of gate to base hospital	34	01	08.96	80	55	57.43	2,592

From copper-nail station 3407 to bench mark 77.

Copper nail in hub, 25 feet northeast of cherry tree at southeast corner of cabin	34	00	02.17	80	53	29.37	1,483
Copper nail in hub, at forks, 13 feet southwest to blaze on pine tree, 21 feet east to blaze on pine tree	33	59	46.18	80	53	43.23	1,992
Copper nail in hub, at northwest corner of field, 8 feet northeast of blaze on oak tree, 16 feet northwest to blaze on oak tree	33	59	31.34	80	53	59.80	2,047
Copper nail in stump, north of road, 30 feet southwest of corner of corn crib	33	59	05.24	80	54	04.31	2,665

From primary traverse station 37 to bench mark 72. (By L. F. Biggs in 1918.)

Copper nail in hub, 30 feet south and 15 feet west of road forks	34	00	23.04	80	45	40.21	1,900
Copper nail in hub, 50 feet east of house, 25 feet southeast of well	34	00	13.55	80	45	13.80	2,421
Copper nail in stump, west of road, 35 feet south of T road west	34	00	16.92	80	44	41.24	2,762

From level bench mark 343.1 to Browns Chapel.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in hub, south of road, at forks	34	00	08.13	80	52	44.62	1,356
Copper nail in hub, south of road, near danger sign	34	00	05.98	80	52	20.42	2,050
Copper nail in hub, at northeast corner of crossroads, 18 feet southeast of blaze on oak tree, 27 feet east of blaze on oak tree	34	05	46.92	80	51	23.31	.....
Copper nail in hub, 400 feet west of crossroads, 13 feet southeast of blaze on oak tree, 8 feet northwest of blaze on oak tree	34	06	05.73	80	51	30.73	2,000
Copper nail in hub, north of road, 7 feet east of blaze on pine tree, 13 feet west of blaze on oak tree	34	06	02.16	80	51	54.97	2,071
Copper nail in hub, north of road, 75 feet east of crossroads, 7 feet east of blaze on oak tree, 17 feet northwest of blaze on oak tree	34	05	54.02	80	52	22.63	2,468
Copper nail in hub, north of road, 10 feet southeast of blaze on oak tree, 8 feet southwest of blaze on oak tree	34	05	41.26	80	52	39.22	1,903
Copper nail in hub, north of road	34	05	35.29	80	52	52.59	1,273
Copper nail in hub, east of road, 35 feet south of forks	34	05	44.82	80	52	48.00	1,039
Copper nail in hub, south of road, east of field, 21 feet southeast of blaze on hickory tree, 31 feet northwest of blaze on pine tree	34	05	54.04	80	52	48.28	931
Washington Medlin's house, on north edge of road, at corner of yard; iron post stamped "Prim. Trav. Sta. No. 86, 1918 H"	34	06	03.25	80	53	04.23	1,631
Copper nail in hub, on edge of road, near forks, 8 feet north of blaze on oak tree, 10 feet southwest of blaze on oak tree	34	05	55.22	80	53	31.81	2,458
Copper nail in hub, east of road, 25 feet south of gate, 12 feet south of blaze on pine tree, 10 feet southwest of blaze on pine tree	34	06	09.83	80	53	45.60	1,879
Copper nail in hub, northwest corner of crossroads, 12 feet northeast of blaze on oak tree, 45 feet southwest of blaze on oak tree	34	06	10.58	80	54	03.96	1,545

Along Seaboard Air Line Ry.

Concrete post marked "18–19," south of road, 25 feet southwest of overhead railroad crossing	34	06	17.08	80	54	21.43	1,610
U. S. Coast and Geodetic Survey station Weddell A, 1918 (no description)	34	06	05.81	80	54	50.24	2,678
U. S. Coast and Geodetic Survey value	34	06	06.01	80	54	50.32	.....
U. S. Coast and Geodetic Survey station Nob H, 1918 (no description)	34	05	44.61	80	55	19.49	3,260
U. S. Coast and Geodetic Survey value	34	05	44.80	80	55	19.58	.....
Copper nail in tie (station 3692, Biggs)	34	05	22.59	80	55	37.14	2,675
U. S. Coast and Geodetic Survey station Nob G, 1918, on the Seaboard Air Line Ry. right of way, at the curve 700 meters north of milepost 350, about 10 miles north of Columbia, at intersection of tangents to curve of east rail, 2.77 meters west of west rail, 0.5 meter below track. Reference mark: A mound, distance 20.64 meters, 8.10 meters east of east rail, about the same elevation as the track. Station mark: A standard disk set in top of square block of concrete	34	05	14.80	80	55	43.35	943
U. S. Coast and Geodetic Survey value	34	05	14.97	80	55	43.43	.....
U. S. Coast and Geodetic Survey station Nob G (prime), 1918, 0.5 mile west of Weddell station	34	04	58.55	80	56	12.51	2,953
U. S. Coast and Geodetic Survey value	34	04	58.71	80	56	12.59	.....
Nail in wooden guard rail, at southwest corner of crossing, 150 feet east of milepost 350	34	04	43.68	80	56	29.24	2,059
U. S. Coast and Geodetic Survey station Nob F, 1918, on the Seaboard Air Line Ry. right of way, at the second curve about 0.75 mile north of Dentsville railroad station, 1.25 miles south of Weddell railroad station, at intersection of tangents to curve of east rail of main track, 2.44 meters west of west rail. Reference mark: A piece of railroad rail standing upright and projecting two feet above ground with concrete about the base, distance 12.31 meters, 9.91 meters west of west rail. Station mark: A standard disk set in top of a square block of concrete	34	04	22.08	80	56	53.55	2,990
U. S. Coast and Geodetic Survey value	34	04	22.22	80	56	53.61	.....
Copper nail in hub, at southwest corner of crossing over railroad, 28 feet east of whistle post	34	04	04.10	80	57	09.60	2,265
Nail in switch tie, 50 feet northeast of crossing, at Dent, 5 feet north of north rail	34	03	50.26	80	57	27.20	2,037
U. S. Coast and Geodetic Survey station Nob C, 1918, 0.3 mile southwest of Dent, on Seaboard Air Line Ry. right of way, at the curve 520 meters north of milepost 352, about 8 miles north of Columbia railroad station, at intersection of tangents to curve of east rail of main track, 2 meters above the track, 10.27 meters east of east rail. Reference mark: A mound, distance 19.17 meters, about 2.5 meters above the track, 12.96 meters east of east rail. Station mark: A standard disk set in top of a square block of concrete	34	03	35.14	80	57	37.05	1,741
U. S. Coast and Geodetic Survey value	34	03	35.24	80	57	37.10	.....
Nail in guard rail at southwest corner of crossing	34	03	28.92	80	57	44.64	900

Along Seaboard Air Line Ry.—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
U. S. Coast and Geodetic Survey station Nob B, 1918, 75 feet west of house, 75 feet southwest of crossing, on Seaboard Air Line Ry. right of way, at the first curve 0.5 mile north of milepost 353, about 7.5 miles north of Columbia, at intersection of tangents to curve of east rail, 22.05 meters east of east rail, on cultivated land. Reference mark: A mound, distance 16.77 meters, on the prolongation of southward tangent to curve of east rail, 27.5 meters east of east rail, about 1 meter below track. Station mark: A standard disk set in top of a square block of concrete	34	03	08.09	80	58	10.05	3,002
U. S. Coast and Geodetic Survey value	34	03	08.15	80	58	10.08	.....
Nail in tie at southeast corner of crossing, 300 feet southeast of schoolhouse	34	03	04.91	80	58	34.23	2,059
U. S. Coast and Geodetic Survey station Nob A, 1918, 500 feet northeast of overhead crossing, on the Seaboard Air Line Ry. right of way, at the curve 200 meters south of milepost 353, about 7 miles north of Columbia railroad station, at intersection of tangents to curve of east rail of main track, about 4 meters above track. Reference mark: A mound, distance 31.45 meters, on east bank of cut at curve, about 4 meters above track, 20 meters east of east rail. Station mark: A standard disk set in top of a square block of concrete	34	03	01.93	80	58	56.70	1,916
U. S. Coast and Geodetic Survey value	34	03	01.97	80	58	56.72	.....
Copper nail in hub, at forks, 20 feet south of blaze on pine tree, 20 feet northeast of blaze on pine tree	34	02	43.91	80	58	43.97	2,110
Copper nail in hub, north of road, 40 feet east of crossroads, 16 feet west of blaze on pine tree, 20 feet north of blaze on oak tree	34	02	27.67	80	58	26.11	2,227
Copper nail in hub, east of road, 14 feet west of blaze on pine tree, 20 feet northeast of blaze on hickory tree	34	02	09.74	80	58	17.04	1,965
Copper nail, in hub, east of road, 35 feet south of forks, 11 feet south of blaze on pine tree, 11 feet east of blaze on pine tree	34	01	49.07	80	58	04.50	2,341
Copper nail in hub, east of road, 10 feet northeast of blaze on oak tree, 25 feet northeast of blaze on oak tree	34	01	20.30	80	57	47.92	3,226

From copper-nail station 1071 to bench mark 59. (By L. F. Biggs in 1918.)

Copper nail in hub, at forks	34	05	29.61	80	53	08.50	1,456
Copper nail in hub, south of road, at crossroads	34	05	23.85	80	53	20.59	1,170
Copper nail in hub, 50 feet south of five corners	34	04	51.64	80	53	30.38	3,360
Copper nail in hub, north of road, 10 feet northeast of second-class crossroads	34	05	00.20	80	53	52.67	2,064
Copper nail in hub, south of road, 120 feet southeast of house, 150 feet east of forks	34	04	55.77	80	54	18.76	2,238
Copper nail in hub, at forks	34	05	03.64	80	54	41.64	.....
Copper nail in hub, north of road, 12 feet south of blaze on pine tree, at southwest corner of field	34	05	06.89	80	55	06.59	2,124
Copper nail in root of tree, 5 feet north of road, 40 feet north of house	34	04	54.40	80	55	40.67	3,132
Copper nail in hub, west of road, at angle in road	34	04	33.76	80	55	48.17	2,182
Copper nail in hub, west of road, 30 feet west of forks, 200 feet southeast of barn	34	04	14.87	80	55	33.46	2,276
Copper nail in hub, east of road, at northeast corner of crossroads	34	03	57.14	80	55	19.74	2,131
Copper nail in hub, south of road, 20 feet northeast of blaze on persimmon tree	34	03	58.19	80	54	53.89	2,211

From copper-nail station 1020 to copper-nail station 4100.

Copper nail in hub, west of road, 3 feet north of blaze on pine tree, 50 feet north of level bench mark 284.4	34	02	40.16	80	56	31.50	2,265
Copper nail in stump, east of crossroads, 35 feet west of blaze on oak tree, 75 feet east of pump	34	03	05.84	80	56	43.08	2,773
Copper nail in stump, north of road, 5 feet east of blaze on pine tree	34	03	11.71	80	56	32.13	1,097
Copper nail in stump, south of road, 16 feet northwest of blaze on pine tree	34	03	20.07	80	56	15.10	1,664
Copper nail in stump, southeast of road, 12 feet west of oak tree, 18 feet southwest of pump	34	03	31.75	80	55	51.54	2,307
Copper nail in hub, on base line of land survey, 5 feet east of a hub at right angle in base line	34	03	48.58	80	55	53.80	1,715
Copper nail in hub, in front of house, 16 feet west of blaze on oak tree, 5 feet southeast of blaze on oak tree	34	04	07.46	80	55	55.12	1,910
Copper nail in hub, west of road, 160 feet north of stream, near three blazed trees	34	04	25.29	80	56	10.89	2,159

From copper-nail station 4151 to copper-nail station 3667. (By P. W. McMillen in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Copper nail in hub, east of road, at forks, 32 feet south of blaze on persimmon tree, 42 feet southwest of blaze on pine tree	34	01	47.61	80	57	37.83	2,729
Copper nail in hub, north of road, at forks, 6 feet southwest of blaze on pine tree, 8 feet northeast of blaze on pine tree	34	02	11.69	80	57	31.32	2,494
Copper nail in stump, east of road, 10 feet southwest of blaze on pine tree	34	02	18.01	80	57	16.41	1,410
Copper nail in stump, east of road, at forks, 20 feet east of blaze on pine tree	34	02	28.65	80	57	12.56	1,123
Copper nail in hub, west of road, 60 feet north of forks, 6 feet northeast of blaze on oak tree, 30 feet southeast of blaze on oak tree	34	02	51.75	80	57	07.66	2,373

From copper-nail station 3602 to copper-nail station 4081. (By L. F. Biggs in 1918.)

Copper nail in hub, west of road, 200 feet southwest of crossroads	34	05	32.06	80	54	29.76	3,365
Copper nail in stump, east of road, 100 feet north of clearing	34	05	43.27	80	54	13.84	1,755
Copper nail in hub, west of road, near three blazed trees	34	05	58.46	80	54	09.58	1,578

From copper-nail station 4106 to copper-nail station 3667.

Copper nail in hub, east of road, 5 feet south of southeast corner of bridge	34	03	33.45	80	57	13.70	2,047
Copper nail in hub, west of road, on top of hill	34	03	23.42	80	56	58.50	1,634

From copper-nail station 3608 to Weddell.

Copper nail in hub, 50 feet northwest of crossroads	34	05	12.22	80	54	54.50	1,386
Copper nail in hub, south of road, 2,000 feet east of Weddell	34	05	22.01	80	55	20.89	2,429

From copper-nail station 4186 to copper-nail station 4135. (By P. W. McMillen in 1918.)

Copper nail in stump, west of road, 10 feet north of forks, 14 feet northwest of blaze on oak tree, 35 feet northeast of blaze on oak tree	34	02	30.55	80	57	32.74	1,808
Copper nail in hub, at northeast corner of crossroads, 10 feet northeast of blaze on pine tree, 22 feet northeast of blaze on oak tree	34	02	19.95	80	57	54.92	2,154

From copper-nail station 4127 to copper-nail station 4108.

Copper nail in hub, at forks, 14 feet northwest of blaze on oak tree, 14 feet south of blaze on oak tree	34	02	44.60	80	58	07.85	2,300
Copper nail in hub, north of road, at forks, 12 feet northeast of blaze on oak tree, 8 feet southeast of blaze on oak tree	34	02	48.81	80	57	57.54	964
Copper nail in stump, east of road, 14 feet northeast of blaze on oak tree	34	02	57.32	80	57	48.12	1,170
Copper nail in hub, east of road, 16 feet northeast of blaze on oak tree, 50 feet north of blaze on oak tree	34	03	14.31	80	57	43.63	1,758

From copper-nail station 4112 along Seaboard Air Line Ry. to capitol.

Richland A, 1918, U. S. Coast and Geodetic Survey station on the Seaboard Air Line Ry. right of way, at the curve 330 meters north of milepost 354, 6 miles north of Columbia railroad station, at intersection of prolongation of southward tangent to curve of east rail and northward tangent to curve of west rail, 18.09 meters east of east rail. Reference mark: A mound distance 24.59 meters, 0.5 meter south of first telegraph pole north of station, 8.52 meters west of west rail of main track. Station mark: A standard disk set in top of block of concrete	34	03	20.87	80	59	29.57	3,365
U. S. Coast and Geodetic Survey value	34	03	20.91	80	59	29.62	.....
Richland, 1918, U. S. Coast and Geodetic Survey station, reference point to	34	03	22.98	80	59	53.23	2,002

From copper-nail station 4112 along Seaboard Air Line Ry. to capitol—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Hyatts, 1918, U. S. Coast and Geodetic Survey station on the Seaboard Air Line Ry. right of way, at the curve 150 meters south of milepost 355, about 600 meters north of Hyatts railroad station, at intersection of tangents to curve of west rail of main track, 2.12 meters west of west rail; U. S. Coast and Geodetic Survey bench mark T_2, distant 200 meters. Station mark: A standard disk set in the top of a concrete block	34	03	01.42	81	00	45.32	4,893
U. S. Coast and Geodetic Survey value	34	03	01.44	81	00	45.38	.....
Road crossing	34	02	30.13	81	01	40.52	5,620
Iron bridge, 240 feet north of hub in concrete base	34	01	41.44	81	02	29.74	6,432
Elmwood B, U. S. Coast and Geodetic Survey station on the Seaboard Air Line Ry. right of way, about 2 miles north of Columbia passenger station, 70 meters north of milepost 358, 25 meters south of signboard painted "Yard Limit," 1.54 meters east of east rail of main track; standard disk set in top of square block of concrete	34	01	16.77	81	02	43.78	2,768
U. S. Coast and Geodetic Survey value	34	01	16.64	81	02	43.82	.....
Elmwood A, U. S. Coast and Geodetic Survey station, 200 feet west of railroad on top of bank, just west of the Seaboard Air Line Ry. right of way, at the curve 1 mile north of the railroad depot at Columbia, at intersection of tangents to curve of west rail of main track, about 35 meters west of west rail, 2 meters above the track. Station Elmwood, distant 20.4 meters, is about 1 meter above Elmwood A, on opposite side of public road. Reference mark: A mound, distance 37.48 meters. Station mark: A standard disk set in top of block of concrete	34	00	50.87	81	02	58.66	2,895
U. S. Coast and Geodetic Survey value	34	00	50.82	81	02	58.69	.....
Columbia D, 1918, station of the U. S. Coast and Geodetic Survey, in Columbia, on the Seaboard Air Line Ry. right of way, at north end of the curve 165 meters north of milepost 359, 60 meters south of overhead road crossing, on prolongation of northward tangent to curve of west rail of main track, 2.00 meters west of west rail; a standard disk in top of concrete block	34	00	31.30	81	02	48.81	2,145
U. S. Coast and Geodetic Survey value	34	00	31.25	81	02	48.82	.....
Columbia C, station of the U. S. Coast and Geodetic Survey, on the Seaboard Air Line Ry. right of way, at curve of the cut about 0.5 mile north of Columbia railroad station, 25 meters north of milepost 359, on prolongation of southward tangent to curve of east rail of main track, 2.63 meters west of west rail; standard disk in top of a concrete block	34	00	27.57	81	02	45.90	447
U. S. Coast and Geodetic Survey value	34	00	27.54	81	02	45.91	.....
Columbia A, 1918, station of the U. S. Coast and Geodetic Survey on the Seabroad Air Line Ry. right of way, at the first curve about 400 meters north of depot at Columbia, on prolongation of southward tangent to curve of west rail of main track, 7.76 meters east of east rail. Reference mark is center of fire plug, top of which is 2 feet above ground, distant 12.65 meters. Station mark: A standard disk set in top of concrete block	34	00	17.07	81	02	27.09	1,905
U. S. Coast and Geodetic Survey value	34	00	17.06	81	02	27.08	.....
Columbia, capitol dome, base of flagpole	34	00	00.80	81	01	59.52	2,844
U. S. Coast and Geodetic Survey value	34	00	00.78	81	01	59.49	.....

CHAPIN QUADRANGLE.

East along south border of quadrangle to Lexington. (By R. B. Steele and Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of stream crossing	34	01	08.3	81	29	10.7	.....
Center of crossroads	34	00	10.1	81	28	20.0	7,273
T road west, 0.23 mile south of St. Mark Church	34	00	25.5	81	26	30.8	.....
Road fork	34	00	56.1	81	26	17.0	3,313
Horse Creek, center of bridge over	34	01	07.9	81	25	58.0	1,988
Road fork	34	01	07.6	81	25	23.8	2,884
Center of crossroads, 0.28 mile south of Beulah Church	34	00	59.4	81	24	36.9	4,032
Road fork, 420 feet east of, 10 feet from pine stump, 8 feet north of center of road	34	01	19.7	81	24	32.7	2,084
Crossroads	34	00	59.4	81	24	37.0	2,081
Center of bridge	34	00	48.8	81	24	09.9	2,518
Crossroads	34	00	31.4	81	23	41.0	3,007
Road fork	34	00	02.3	81	23	18.6	3,495

Magnetic declination near south border of quadrangle, 0° 10′ E.

CHARLESTON 15′ QUADRANGLE (WANDO, FORT MOULTRIE, MELGROVE, AND CHARLESTON 7½′ QUADRANGLES).

Northeast along highways. (By Oscar Jones in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Mount Pleasant, computed by triangulation from three U. S. Coast and Geodetic Survey points	32	47	08.3	79	52	41.0	.....
Mount Pleasant, intersection of streets, 500 feet east of ferry wharf, northwest corner of Episcopal Church	32	47	18.1	79	52	46.0	1,083
Center of road, opposite milepost 4	32	47	40.4	79	51	42.0	5,914
Road fork, west of milepost 2	32	48	09.8	79	51	15.9	3,714
Three corners at road fork	32	48	20.6	79	51	07.8	1,288
Road fork	32	48	50.1	79	51	00.0	3,049
Road fork, in front of colored Baptist Church	32	49	32.5	79	50	16.6	5,665
Road fork	32	50	07.9	79	49	23.6	5,765
Center tower of brick church	32	50	38.3	79	48	50.1	4,198
Center of road, opposite church	32	51	25.9	79	47	51.3	6,945
Road fork	32	51	52.0	79	47	11.6	4,294
Road fork	32	52	08.7	79	46	49.4	2,535
Road fork	32	52	27.9	79	46	14.9	3,520
Crossroads	32	52	40.5	79	45	53.6	2,219

Magnetic declination in northeast part of quadrangle, 1.3° W.

South along railroad near west border of quadrangle. (By E. L. McNair in 1917.)

Milepost 156	32	56	56.4	79	59	56.2	.....
Inness flag station, road crossing	32	56	06.2	79	59	48.5	5,115
Milepost 158	32	55	19.2	79	59	17.6	5,436
Second-class road crossing	32	54	35.9	79	58	49.6	4,985
Public-road crossing	32	54	09.5	79	58	49.1	2,665
Crossing on branch of Southern Ry	32	53	28.3	79	58	48.3	4,170
North Charleston station, road crossing at	32	52	52.8	79	58	47.7	3,585
Center of circle, marked by concrete post 4 inches square with nail in top	32	52	52.5	79	59	07.1	1,656
Ashley Junction, main public-road crossing on Atlantic Coast Line R. R., center of north-bound track	32	52	16.9	79	59	47.9	5,010
Ashley Junction, Prim. Trav. Sta. No. 15 (previously described)	32	51	57.7	79	59	47.2	1,942
Ashley Junction, public-road crossing, east rail, north-bound track	32	52	16.9	79	59	48.0	1,941

Southeast along railroad. (By E. L. McNair in 1917.)

Ashley Junction, intersection of Atlantic Coast Line and Southern railroads	32	51	56.0	79	59	51.9	.....
Ashley Junction, 430 feet east of intersection of Atlantic Coast Line and Southern railroads, in line with tangent west on Atlantic Coast Line R. R., 25 feet west of public road, 3 feet north of telephone pole, in Y of Atlantic Coast Line R. R.; iron post stamped "Prim. Trav. Sta. No. 15, 1917 Mac." Azimuth to center of top of water tank at Bennett, 0.75 mile distant, 65° 12′	32	51	57.7	79	59	47.2	435
Center of road crossing, north-bound track	32	51	43.6	79	59	30.2	2,033
Road crossing, center of south-bound track	32	51	09.3	79	58	53.9	4,647
Road crossing, opposite West flag station, Southern Ry	32	50	42.0	79	58	04.2	5,057
Road crossing, 60 feet southeast of signalman's tower	32	49	38.5	79	57	09.3	7,942

Southeast along railroad.

Street crossing, directly opposite Magnolia tower	32	48	56.0	79	57	03.5	4,329
Crossing of Seaboard Air Line and Atlantic Coast Line railroads, center of north track (Atlantic Coast Line)	32	48	25.0	79	56	31.0	4,183
Charleston, Citadel Baptist Church	32	47	13.9	79	56	04.5	7,529
Charleston, St. Michael's Church	32	46	34.2	79	55	51.4	4,168

Along highways in southwest part of quadrangle. (By E. L. McNair in 1917.)

Road forks	32	47	01.4	79	59	45.8	.....
Road forks	32	46	55.0	79	59	09.6	3,164
T road south to James Island	32	46	46.9	79	58	24.7	3,917
Charleston, Ashley River, center of draw span of highway bridge	32	46	59.2	79	57	44.9	3,621
Charleston, St. Michael's Church tower, U. S. C. & G. S. station	32	46	34.18	79	55	51.39	10,013

CHARLESTON 15′ QUADRANGLE—Continued.

Along highways west and southwest through north part of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of bridge	32	56	57.3	79	45	04.3	.....
Guerin bridge, center of	32	57	22.0	79	45	48.2	4,496
Small road bridge	32	58	05.5	79	46	09.3	4,743
Cainhoy (Wando post office), about 5 miles northeast of, 15 feet north and 20 feet east of crossroads, road east to Awensdaw and road south to Guerin bridge, among small pine trees; iron post stamped "Prim. Trav. Sta. No. 52, 1917 Mac"	32	58	39.6	79	46	03.1	3,483
Road forks, 140 feet from creek	32	58	23.5	79	46	21.9	2,280
Crossroads, road south leads through gate	32	58	00.4	79	47	01.2	4,081
Ford of small creek, 675 feet north of small bridge	32	57	06.1	79	48	03.6	7,642
Tuxbury Lumber Co.'s railroad, crossing on	32	56	15.6	79	49	10.8	7,669
T road south to Cainhoy, about 0.25 mile	32	56	00.9	79	49	51.4	3,768
Second-class crossroads	32	56	03.4	79	50	33.8	3,620
Road forks at junction of wagon tracks	32	55	17.6	79	52	07.0	9,187
Bridge over creek	32	55	18.0	79	52	24.7	1,508
Iron gate in fence	32	54	44.3	79	53	33.5	6,776
Crossroads	32	54	32.8	79	54	00.1	2,550
Road forks, about 200 feet west of iron gate across road	32	54	07.6	79	54	58.0	5,549
Center of road, opposite milestone marked "2 Calais," about 400 feet south of crossroads	32	53	30.3	79	55	31.5	4,731
Mary Ann Baptist Church, road corners	32	53	15.8	79	55	46.4	1,936
Field triangulation station of U. S. Coast and Geodetic Survey, on left bank of Cooper River, 1.2 meters north of oak tree, on shell heap outside of wood line, 200 meters southwest from negro shanty; reference marks, 10-inch cedar tree, east 36.2 feet, 8-inch oak tree northeast 66.8 feet	32	52	38.9	79	56	37.7	5,753

South along highways near west border of quadrangle.

T road south to James Island	32	46	46.9	79	58	24.7	.....
Center of draw span over Wappoo Creek	32	45	59.4	79	58	20.6	4,808
Forks of road	32	45	45.2	79	58	32.8	1,773
Forks of road	32	45	02.6	79	58	21.3	4,422
Fort Johnson triangulation station of the U. S. Coast Survey, on same point as U. S. quarantine station, 2½ miles across bay from Charleston, 400 feet south of quarantine buildings, on top of conical mound about 25 or 30 feet high, which was an old bombproof, on concrete cone about 18 inches high; standard tablet	32	45	04.8	79	53	52.9	.....

Southwest along highways. (By E. L. McNair in 1917.)

Road crossing	32	59	49.1	79	45	27.5	.....
Road crossing at Tuxbury Lumber Co.'s camp No. 1	32	59	27.2	79	46	06.1	3,958
Prim. Trav. Sta. No. 52, Mac 1917 (previously described)	32	58	39.6	79	46	03.1	4,817

Magnetic declination for southwest part of quadrangle, 1.5° W.

North along Cooper River road through middle of quadrangle.

T road south, near Cainhoy	32	56	00.9	79	49	57.4	.....
Second-class crossroads	32	56	48.3	79	50	32.0	5,908
Forks of road, about 700 feet north of samll creek	32	57	22.0	79	51	09.9	4,697
Crossroads	32	57	45.7	79	51	28.1	2,481
Milestone, marked "10 miles to C"	32	58	51.5	79	51	06.8	6,899
Milestone, marked "11 miles to C"	32	59	41.0	79	50	47.6	5,260

Magnetic declination for center of quadrangle, 1.4° W.

CHICORA QUADRANGLE.

East along highways near south border of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Forks of road, 40 feet south of gate across road	33	15	08.4	80	11	47.0	.....
Second-class crossroad	33	16	21.4	80	10	42.4	9,206
Crossroads, near cross-graded school	33	16	53.5	80	10	12.6	4,111
Cross-graded school, about 0.8 mile east of, 80 feet east and 20 feet south of forks of road, 20 feet south of center of road, 4 feet north of picket fence, at house of I. B. Marshe; iron post stamped "Prim. Trav. Sta. No. 68, 1917 Mac." Azimuth to nail in pine tree 880 feet distant, 259° 23′ 40″	33	16	42.6	80	09	24.5	4,223
Angle of 16.5° in road, intersection of two long straight stretches	33	16	46.6	80	07	52.9	7,793
Angle of 23° 20′ in road, intersection of two long straight stretches, 30 feet east of small gate	33	16	19.4	80	07	12.4	4,400
Crossroads	33	16	08.3	80	06	30.6	3,720
Second-class road, northeast of mail box	33	16	06.7	80	05	57.6	2,807
Forks of road, private road southwest through gate	33	16	07.4	80	04	14.4	8,766
Forks of road, at Hog Swamp store and gin	33	16	06.9	80	03	32.1	3,597
Center of bridge over creek, about 280 feet S. 25° E. from angle in road	33	15	10.7	80	02	22.1	8,221

Magnetic declination for south border of quadrangle, 0.9° W.

From post 68, McNair 1917, west along public road to post 65, McNair 1917, thence northwest to Holly Hill. (By Oscar Jones in 1919.)

Prim. Trav. post 68, McNair 1917 (previously described)	33	16	42.65	80	09	24.54	.....
Road fork	33	16	56.3	80	10	36.6	6,271
White Church, center of road opposite	33	16	58.5	80	11	30.2	4,556
Center of bridge	33	16	54.0	80	12	07.0	3,153
Lagara, 1 mile east of, on Monks Corner road, south side, 300 feet west of W. G. Groom's mail box, bench-mark post stamped "Elev. 97"	33	16	46.85	80	13	14.92	5,812
T road north	33	16	54.7	80	14	04.5	4,286
Road fork southeast	33	16	50.9	80	14	25.2	1,800
Schoolhouse, center of road opposite	33	16	46.8	80	14	48.4	2,009

From Eutaw Springs east along Monks Corner road to Pinopolis.

T road south at Orangeburg and Berkeley county line	33	22	58.0	80	14	29.0	.....
Tie point	33	22	57.4	80	14	27.4	149
T road south at church	33	22	50.7	80	14	08.5	1,740
Center of bridge	33	22	38.5	80	13	26.5	3,768
Crossroad at store	33	22	22.5	80	12	52.0	3,343
Road fork	33	22	01.7	80	12	19.8	3,449
T road south	33	21	45.0	80	11	18.4	5,475
Road fork	33	21	35.6	80	10	48.2	2,729
Road fork	33	21	07.4	80	09	48.7	5,796
T road south	33	20	56.8	80	09	22.4	2,478
Cross post office, 2 miles north of, 200 feet east of W. K. Cross's store, 40 feet east of crossroads on south side and in line with road north; iron post stamped "Prim. Trav. Sta. No. 69 J, 1919"	33	20	39.96	80	08	32.66	4,552
Crossroads	33	20	01.9	80	07	59.0	4,792
Road fork	33	19	36.5	80	06	42.3	7,001
Angle in road, metal culvert pipe	33	19	31.6	80	06	15.2	2,354
Crossroads	33	19	19.9	80	06	03.9	1,519
White Church, center of road opposite	33	18	56.0	80	05	30.1	3,751
Crossroads at school	33	18	42.4	80	05	01.4	2,800
Tie point	33	18	41.0	80	04	58.2	310
Road fork to Bonneau, at store	33	18	36.2	80	04	54.1	600
Ferguson Swamp, center of bridge, the north one of several in swamp	33	18	03.3	80	03	52.9	6,167
Center of small culvert	33	17	30.2	80	03	36.2	3,628
Crossroads at church	33	17	11.1	80	03	26.8	2,088
Road fork	33	16	27.8	80	03	40.6	4,538
T road west at gin and store	33	16	06.9	80	03	31.8	2,242
Temporary bench mark 70.6 at road fork, nail in root of pine tree	33	15	33.0	80	02	59.8	4,370
Center of bridge	33	15	10.7	80	02	22.0	3,925

CHICORA QUADRANGLE—Continued.

From station 6,290 south along county-line road to post 68, McNair 1917.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Tie point (previously described)	33	22	57.4	80	14	27.4	.....
Crossroads	33	22	06.9	80	14	25.2	5,115
Road fork at angle in road	33	21	46.4	80	14	20.3	2,125
Road fork opposite store	33	20	57.4	80	14	28.4	4,999
Road fork on west side of road, in triangle formed by road fork, 500 feet west of St. Paul Church, 5 feet south of J. F. Rogers's mail box; iron post stamped "Prim. Trav. Sta. No. 70, 1919 J"	33	20	20.86	80	14	51.99	4,203
Center of bridge	33	19	38.2	80	14	49.6	4,323

Mean magnetic declination for south half of quadrangle, 0° 42′ W.

Eutaw Springs east along public road to Pineville across north end of quadrangle.

Rock Creek, center of bridge over, on Orangeburg and Berkeley county line	33	24	39.0	80	13	28.3	.....
Center of bridge	33	24	45.0	80	13	02.1	2,301
Center of bridge	33	24	40.0	80	12	09.2	4,516
Road fork	33	24	30.3	80	11	15.9	4,619
Crossroads	33	24	24.1	80	10	41.0	3,021
Crossroads	33	24	33.1	80	10	09.2	2,850
Greenland Baptist Church, 670 feet east of crossing of Greenland Swamp and River Road, 95 feet south of church, on north side of road; "Prim. Trav. post No. 67 J, 1919"	33	24	43.22	80	09	05.99	5,456
Road fork	33	24	50.1	80	08	19.8	3,975
Center of bridge	33	25	09.2	80	07	52.6	3,007
Crossroads	33	25	40.0	80	07	10.5	4,739
Center of bridge crossing old Santee Canal	33	25	59.7	80	06	43.5	3,039
Center of bridge	33	26	10.3	80	05	59.6	3,871
Road fork leading to grave of Gen. Francis Marion	33	26	21.0	80	05	12.9	4,099
Road fork	33	26	24.6	80	04	35.4	3,199
Road fork	33	26	32.4	80	03	56.6	3,382
Road fork	33	26	12.9	80	03	05.1	4,793
Crossroads	33	26	06.0	80	02	32.6	2,837
Pineville, at road fork on south side, 600 feet east of Redeemer church; "Prim. Trav. post No. 68 J, 1919"	33	25	39.81	80	01	45.66	4,779
Crossroads	33	26	06.7	80	00	54.6	5,108

Mean magnetic declination, 1° 08′ W.

From Pineville southeast through east central part of quadrangle to Bonneau. (By Oscar Jones in 1919.)

Pineville, post 68 (previously described)	33	25	39.81	80	01	45.66	.....
Center of creek	33	25	06.5	80	01	33.2	3,528
Crossroads	33	24	46.4	80	01	24.7	2,154
Road fork at right-angle turn in road	33	24	46.6	80	00	49.3	2,999
Road forks at mail box	33	24	06.1	80	00	29.1	4,433
Road fork at graveyard	33	23	59.1	80	00	17.6	1,202

From station 6442 east in southeast corner of quadrangle to Bonneau.

Road fork to Bonneau at store (previously described)	33	18	41.0	80	04	58.2	.....
T road south	33	18	33.5	80	04	06.2	4,476
Road fork opposite well	33	18	40.3	80	03	40.4	2,297
Biggin Swamp, center of bridge, western one of several	33	18	32.4	80	03	09.6	2,739
Road fork at gin	33	18	46.6	80	01	54.3	6,552
Crossing of old Santee Canal at Brick Lock	33	18	42.4	80	01	38.2	1,437
T road south at store	33	18	45.3	80	01	12.8	2,178
Center of road, opposite 2-story house on south side of road	33	18	46.5	80	00	00.7	6,126

Magnetic declination for southeast corner of quadrangle, 54′ W.

CLARKS HILL QUADRANGLE.

North along highways near east border of quadrangle. (By B. H. Yoakum in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks south, opposite mail boxes 9 and 10	33	32	47.4	82	00	11.9	.....
Center of Martinstown road, opposite G. Bunck's mail box, at private T road west	33	33	19.3	82	00	22.9	3,362
Center of road, at T road west	33	33	50.5	82	00	43.2	3,591
Center of road, in line with T road east to Sweet Water Church	33	34	03.2	82	00	43.2	1,277
Road fork northwest, near residence on Poverty Hill	33	34	11.0	82	00	44.3	798
Center of road, opposite S. J. Carley's store	33	34	58.5	82	00	43.4	4,795
Center of road, at T road east	33	35	17.1	82	00	46.6	1,901
Center of road, opposite southwest corner of cemetery fence at Hardys Church	33	36	00.5	82	01	05.6	4,670
Hardys Church, 0.3 mile north of, 910 feet north of Merryweather Agricultural Hall, about 0.25 mile south of J. Thairmond's store, 30 feet east of Martinstown road, 10 feet south of Currytown road; iron post stamped "Prim. Trav. Sta. No. 7, 1918 Y"	33	36	17.4	82	01	02.1	1,737
Center of Currytown road, at private T road north, opposite Walker Baptist School	33	36	18.0	82	00	01.6	5,112
Road fork in angle, 10 feet from each road	33	41	40.3	82	00	03.0	.....
Horns Creek, 800 feet west of ford, 35 feet west of center of triangle formed by T road fork, 55 feet west of two mail boxes, marked "No. 52 C. H. Mims" and "No. 53, W. B. Butler," 10 feet north of center of road; iron post stamped "Prim. Trav. Sta. No. 8, 1918 Y"	33	43	39.6	82	00	25.4	.....

Magnetic declination for east border of quadrangle, 0.7° E.

Along highways near north border of quadrangle.

Henry Smith's residence, 800 feet south of, road forks	33	44	13.1	82	01	01.3	.....
Rock chimney on top of bare knoll, north side of road	33	44	43.1	82	01	38.2	4,365
T road south at Charles Prescott's mail box	33	44	52.2	82	05	34.4	.....
Crossroads	33	44	32.1	82	06	34.0	5,428
W. T. Lamb's residence, 490 feet west of, road fork south	33	44	02.2	82	07	40.6	6,382
Gundy Creek, 0.25 mile northwest of wagon bridge over, 500 feet east of old frame house on south side of road, 15 feet north of Scott's Ferry road, in angle betwen road forks; iron post stamped "Prim. Trav. Sta. No. 21, 1918 Y"	33	44	26.8	82	08	36.4	5,331
W. M. Agner's residence, opposite gate at, center of Scott's Ferry road	33	43	51.9	82	09	32.1	5.885
T road fork at three mail boxes	33	43	38.0	82	10	16.6	4,010
Stevens Creek, 0.5 mile west of, T road north	33	43	45.7	82	11	20.7	5,476

Along Charleston & Western Carolina Ry. south near middle of quadrangle from Modoc to Meriwether.

Modoc, 0.25 mile south of station at, road crossing	33	43	49.8	82	12	23.4	5,316
Modoc, 1 mile south of, private-road crossing	33	42	59.5	82	12	13.7	5,138
Public-road crossing	33	42	14.1	82	11	59.0	4,757
Road crossing, 0.27 mile south of milepost 25	33	41	04.2	82	11	07.9	8,276
Clarks Hill station, 380 feet northwest of, road crossing	33	40	20.1	82	10	30.1	5,479
Public-road crossing, 710 feet north of milepost 22	33	39	21.5	82	09	46.4	6,981

Along highways through center of quadrangle east from Meriwether.

Meriwether, 1 mile southeast of, center of triangle formed by road-forks	33	38	25.6	82	09	13.4	6,302
Bethany Church, 0.42 mile east of, road forks	33	37	58.4	82	08	29.8	4,598
Old Woodlawn post office, at residence of M. E. McKie, 20 feet east of main wagon road, 35 feet north of second-class road east known as "Mark Rock Trail;" iron post stamped "Prim. Trav. Sta. No. 22, 1918 Y"	33	37	24.8	82	07	48.1	4,901
Hopewell Church (new building), center of road opposite	33	36	34.8	82	07	26.5	5,367
Road forks in swamp	33	36	10.4	82	06	26.8	5,623
T road north, at J. W. Hudson's mail box	33	36	35.5	82	04	56.4	8,065
T road south	33	36	15.8	82	04	04.1	4,850
Morgana post office, 650 feet north of, road forks	33	36	35.1	82	03	10.0	4,975
Morgana post office, 0.65 mile east of, private-road fork	33	36	43.0	82	02	39.6	2,691
Stevens Creek ferry, 0.2 mile east of, T road southwest	33	36	51.2	82	01	36.5	5,400
Prim. Trav. Sta. No. 7, 1918 Y (previously described)	33	36	17.4	82	01	02.1	4,500

CLARKS HILL QUADRANGLE—Continued.

Along Charleston & Western Carolina Ry. from Meriwether, S. C., to Evans, Ga.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Meriwether station, south side of, road crossing main track	33	38	48.5	82	09	52.5	.....
Private-road crossing	33	38	01.0	82	09	56.6	4,817
Road crossing, at siding	33	37	12.7	82	09	56.7	4,870
Milepost 18, center of track opposite	33	36	17.7	82	09	04.5	7,102
Savannah River, South Carolina end of railroad bridge over	33	35	31.2	82	08	05.4	6,855
Along highways near north border of quadrangle.							
Kilkrase Ferry, east landing of, center of road	33	43	39.6	82	14	17.4	.....
Kilkrase Ferry, 1 mile east of, T road north	33	44	06.2	82	13	24.8	5,190

Magnetic declination along north border of quadrangle, 0° 42′ E.; through center, 0° 48′ E.; along south border, 0° 49′ E.; along west border, 1° 16′ E.

CONWAY QUADRANGLE.

Southeast along highways near center of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Aynor, at Peedee Hotel, center of street	33	59	58.5	79	11	58.5	.....
Center of bridge	33	59	50.9	79	11	10.6	4,107
Crossroad	33	59	45.7	79	10	37.0	2,880
Road fork	33	59	38.9	79	09	54.2	3,670
Road fork	33	58	47.7	79	08	46.0	7,729
Cool Spring, about 600 feet southeast of depot, road fork	33	58	20.2	79	08	09.2	4,168
Road fork	33	57	50.0	79	07	56.9	3,223
Center of road, opposite church	33	57	12.6	79	07	31.3	4,356
Center of culvert	33	56	52.9	79	07	01.6	3,200
Road fork	33	56	41.0	79	06	34.1	2,610
Cook siding on Atlantic Coast Line R. R., southeast of road to, southwest corner of road fork, 2 feet west of telephone pole; iron post stamped "Prim. Trav. Sta. No. 10, 1918 J"	33	56	23.9	79	05	43.7	4,585
Road fork	33	55	59.8	79	05	00.2	4,404
Road fork	33	54	12.6	79	03	57.0	12,059
Homewood, flowing well	33	53	03.7	79	02	54.1	8,755
Center of bridge	33	52	33.5	79	02	55.7	3,059
T road west at schoolhouse	33	51	58.9	79	03	11.0	3,733
Center of bridge	33	51	30.5	79	03	20.8	2,984
Crossroads	33	51	07.0	79	03	27.5	2,446
Conway, in northwest corner of courthouse yard, 3 feet from fence; iron post stamped "Prim. Trav. Sta. No. 11, 1918 J"	33	50	04.9	79	02	45.7	7,197
Railroad crossing	33	49	39.1	79	03	30.1	4,562
Road fork	33	48	50.6	79	04	18.5	6,380
Road fork	33	48	29.2	79	04	39.9	2,820
Crossroads	33	48	06.8	79	04	30.0	2,418
Road fork	33	47	32.4	79	04	24.2	3,509
Center of road, opposite church	33	46	39.5	79	04	21.4	5,354
Road fork	33	46	14.0	79	04	19.2	2,586
Toddville School, 150 feet northwest of, in southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 12J, 1918"	33	45	30.2	79	04	32.7	4,571
Crossroads, 200 feet south of bridge	33	45	06.6	79	04	56.7	3,129

Magnetic declination for center of quadrangle, 2° 06′ E.

South along highways near east border of quadrangle.

Conway, Prim. Trav. Sta. No. 11 (previously described)	33	50	04.9	79	02	45.7	.....
Road fork	33	50	11.4	79	02	29.1	1,548
West end of bridge	33	49	48.9	79	01	34.6	5,128
Road fork	33	49	13.9	79	01	10.5	4,080
Center of bridge	33	47	43.7	79	01	06.8	9,126
Center of bridge	33	47	23.0	79	01	09.1	2,103
Road fork near church	33	46	32.5	79	01	15.5	5,139
Center of bridge	33	46	00.8	79	01	12.7	3,208
Center of bridge	33	45	42.4	79	01	13.2	1,864
Road fork	33	45	18.4	79	01	14.1	2,423

Magnetic declination near east border of quadrangle, 2° 01′ W.

CONWAY QUADRANGLE—Continued.

Northwest along highways.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of road, opposite flowing well, at church	33	45	27.2	79	11	12.7	.....
Crossroads, at house	33	45	54.0	79	11	17.5	2,736
Road fork	33	46	15.5	79	11	20.0	2,182
Center of creek	33	46	34.4	79	11	26.6	1,992
Crossroads	33	47	01.4	79	11	50.0	3,368
North end of long bridge	33	47	26.9	79	12	14.8	3,320
Road fork	33	48	17.5	79	12	10.6	5,129
Road fork	33	48	39.5	79	12	11.5	2,220
Crossroads, at church	33	49	22.0	79	12	42.2	5,015
Road fork	33	49	57.0	79	13	06.7	4,100
Crossroads, Conway and Potato Bin Ferry roads	33	50	18.7	79	13	22.1	2,545
Road fork	33	50	43.2	79	13	30.8	2,580
Center of bridge, north one of two	33	51	45.4	79	13	50.1	6,498
Road fork	33	52	38.0	79	14	02.7	5,417
Road fork	33	53	01.9	79	14	05.5	2,426
Jordanville, 0.5 mile south of, 150 feet northwest of church, in southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 14 J, 1918"	33	53	32.6	79	14	13.4	3,169
Road fork	33	53	32.7	79	13	41.3	2,700
Center of road, in front of schoolhouse	33	53	14.9	79	12	55.3	4,277
Road fork	33	53	14.8	79	12	09.0	3,900
Road fork	33	53	07.9	79	11	15.7	4,550
Road fork	33	53	00.9	79	10	39.7	3,120
Center of bridge, 100 feet west of road fork	33	52	48.1	79	10	30.1	1,521
Crossroads	33	52	44.3	79	10	00.6	2,520
Center of road, opposite house	33	52	41.8	79	09	26.8	2,853
Small culvert	33	52	25.4	79	08	52.7	3,323
Road fork	33	52	15.6	79	08	09.6	3,768
Center of bridge	33	52	15.4	79	07	09.2	5,090
Crossroads	33	52	22.8	79	06	17.3	4,444
Crossroads, Conway, Galavants Ferry, and Jordanville	33	51	39.2	79	05	30.8	5,902
Center of bridge	33	51	20.4	79	04	56.0	3,499
Center of bridge	33	50	55.8	79	04	10.8	4,550
Road fork	33	50	40.8	79	03	42.8	2,810
Railroad crossing, 200 feet west of hospital	33	50	26.7	79	03	14.5	2,778
Conway, Prim. Trav. Sta. No. 11 (previously described)	33	50	04.9	79	02	45.7	3,279

Magnetic declination in northwest part of quadrangle, 2° 05′ W.

North along highways near west border of quadrangle.

Prim. Trav. Sta. No. 4 (previously described)	33	53	32.6	79	14	13.4	.....
Road fork	33	54	43.4	79	14	19.6	7,180
Road fork, 300 feet north of bridge	33	55	37.4	79	14	33.7	5,585
Crossroads, at cattle dip	33	56	46.1	79	14	26.5	6,933
Crossroads	33	57	25.5	79	14	28.2	3,982
Road fork, at house	33	58	03.1	79	14	21.4	3,847
Center of bridge	33	58	22.0	79	14	25.7	1,954
Road fork, at tobacco barn	33	58	52.7	79	14	58.9	4,172

Magnetic declination along west border of quadrangle, 1° 58′ W.

Northeast along the Aynor & Myrtle Beach branch railroad. (By Oscar Jones in 1918.)

Road fork	33	49	13.9	79	01	10.5	.....
Center of road, opposite house on east side of road	33	49	23.8	79	00	45.1	2,363
Crossroads at graveyard	33	49	25.4	79	00	06.1	3,293

Along highways in east part of quadrangle.

Road fork	33	50	11.4	79	02	29.1	.....
Road fork, at northeast corner of field	33	50	40.5	79	01	33.3	5,549
Center of road, opposite tobacco barn, on south side of road	33	50	58.7	79	00	53.8	3,808
Road fork	33	51	03.0	79	00	32.9	1,816
Road fork	33	51	15.0	79	00	13.5	2,037

CONWAY QUADRANGLE—Continued.

Along highways in northeast part of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Station 539, junction point	33	58	20.6	79	08	09.5	
Center of road, opposite house	33	58	21.9	79	07	19.3	4,228
Crossroads, at two mail boxes	33	58	18.8	79	06	34.8	3,760
Road fork, 200 feet north of small creek crossing	33	58	26.2	79	06	24.0	1,186
Crossroads	33	58	32.3	79	05	50.8	2,861
Creek crossing	33	58	48.6	79	05	22.1	2,926
Road fork	33	59	09.4	79	04	40.9	4,057
Crossroads at store, Conway 11.5 miles	33	59	36.4	79	03	23.3	7,081
Center of bridge	33	59	41.6	79	02	35.2	4,078
Center of bridge	33	59	15.1	79	01	21.3	
Road fork	33	58	25.0	79	01	03.2	5,288
Road fork	33	58	07.2	79	01	09.1	1,869
Center of bridge	33	57	15.1	79	01	25.6	5,444
Crossroads	33	56	57.5	79	01	34.2	1,922
Road fork	33	56	18.8	79	01	58.6	4,414
Crossroads, Adrian Road	33	55	34.1	79	02	15.8	4,749
Forks of road to sawmill	33	55	15.1	79	02	25.3	2,080
Forks of road	33	54	48.4	79	02	36.8	2,869
Forks of road	33	54	18.6	79	02	49.8	3,201
Crossroads	33	53	52.7	79	02	50.0	2,615
Homewood, hub station 586=station 1993, junction point	33	53	05.4	79	02	54.6	4,797

Magnetic declination in northeast part of quadrangle, 2° W.

COTTAGEVILLE QUADRANGLE.

Northeast along railroad near south border of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost Sav. 74	32	45	02.0	80	31	06.8	
Switch stand, at turnout to sawmill	32	45	20.7	80	29	55.1	6,410
Milepost Sav. 76	32	45	33.2	80	29	07.3	4,270
Switch stand at end of siding	32	45	44.7	80	28	15.2	4,602
Jacksonboro station, 175 feet east of, 25 feet north and 100 feet west of public-road crossing, 15 feet east of water-oak tree; iron post stamped "Prim. Trav. Sta. No. 7, 1917 Mac." Azimuth to semaphore stand, west of river, on south side of track, 2,025 feet east, 272° 30′ 00″; azimuth of tangent east, 271° 29′	32	45	44.8	80	27	21.7	4,562
Edisto River, center pier of draw span	32	45	43.9	80	26	51.6	2,574
Road crossing, 0.25 mile west of Ponpon station	32	45	43.2	80	26	19.8	2,715
Ponpon siding, switch stand east end	32	45	42.5	80	25	50.0	2,540
Milepost Char. 35	32	45	40.4	80	25	01.5	4,152
Parkers Ferry flag station, road crossing at	32	45	32.8	80	23	46.6	6,445
Second-class road crossing	32	45	26.9	80	22	56.9	4,280
Adams Run station, road crossing at	32	45	18.1	80	20	46.4	
Road crossing	32	45	19.5	80	19	20.6	8,940
Milepost Chn. 28	32	45	29.4	80	17	50.4	7,331
Road crossing	32	45	38.7	80	16	25.7	7,759

South along highways near west border of quadrangle. (By E. L. McNair in 1917.)

T road west	32	59	45.5	80	29	24.8	
Second-class cross roads	32	59	10.2	80	29	35.9	3,692
Forks of road	32	58	36.4	80	29	29.6	3,450
T road south	32	58	02.8	80	28	55.0	4,503
Forks of road	32	57	43.1	80	28	51.3	2,012
Second-class road southeast	32	57	22.4	80	29	09.0	2,580
Road forks	32	56	57.0	80	29	29.2	3,091
T road north, about 1 mile northwest of Cottageville	32	56	36.2	80	29	38.4	2,241
Cottageville, southwest corner of public-school building; iron post stamped "Prim. Trav. Sta. No. 41, 1917 Mac." Azimuth to nail in root of oak tree, 15 feet from Dr. Vonlehe's office and 5 feet from picket fence, 14° 06′	32	56	15.0	80	28	51.5	4,536
Prominent road fork	32	55	42.5	80	29	50.6	6,005
T road N. 60° E	32	54	25.9	80	29	50.4	
Lane east	32	53	43.7	80	29	37.0	4,418
Crossroads near store, Inns crossroads	32	52	21.9	80	29	19.7	8,397

COTTAGEVILLE QUADRANGLE—Continued.

South along highways near west border of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T road east	32	51	34.6	80	29	24.1	4,799
T road west	32	51	07.6	80	29	26.4	2,730
Center of bridge over slough in marsh	32	50	22.4	80	29	29.7	4,580
T road west at angle in road	32	48	46.6	80	29	34.5	9,690
Cross roads	32	48	28.8	80	29	28.9	1,862
Road forks	32	47	42.4	80	29	15.5	4,828
Road forks	32	47	01.6	80	28	17.8	6,424
Road forks	32	46	28.5	80	27	31.0	5,210
Jacksonboro, 1 mile north of, T road corners	32	46	12.0	80	27	16.3	2,093
Jacksonboro, iron post No. 7 (previously described)	32	45	44.8	80	27	21.7	2,790

Mean magnetic declination near southwest corner of quadrangle, 0° 10′ E.

Near west border of quadrangle. (By E. L. McNair in 1917.)

Small creek, bridge over	32	52	46.2	80	29	55.2	.....
Cross roads at James store	32	52	21.9	80	29	19.7	3,896

Along highways. (By E. L. McNair in 1917.)

Cottageville, Prim. Trav. Sta. No. 41 (described above)	32	56	15.0	80	28	51.5	.....
T road south	32	55	56.5	80	28	12.2	3,842
T road south	32	55	34.5	80	26	56.5	6,820
Forks of road, road south to Parkers Ferry	32	55	07.2	80	25	40.2	7,068
Crossroads	32	54	57.6	80	24	44.1	4,876
Sullivans Ferry and Cable Austin block, west side of Edisto River	32	54	43.2	80	24	25.1	2,180
Parkers Ferry station, 10.5 miles north of, 1.25 miles east of Sullivans Ferry on Edisto River, 60 feet north of a second-class crossroad, road west leading to Sullivans Ferry, 15 feet west of main north and south road; iron post stamped "Prim. Trav. Sta. No. 44, 1917 Mac"	32	54	22.8	80	23	06.7	6,992
Forks of road, about 800 feet south of church	32	53	39.8	80	23	07.8	4,348
Forks of road	32	52	58.7	80	23	06.9	4,154
Forks of road	32	52	23.6	80	23	08.4	3,556
T road east	32	51	54.5	80	23	10.1	2,944
Crossroad	32	51	25.3	80	23	10.6	2,951
Small creek, bridge over, 2,000 feet north of cemetery	32	50	39.8	80	23	18.5	4,653
Small creek, bridge over	32	49	54.6	80	23	38.4	4,870
Forks of road	32	49	10.4	80	23	57.8	4,769
T road west to old ferry	32	48	47.2	80	24	08.0	2,502
Forks of road	32	47	56.1	80	24	02.2	5,192
T road west	32	47	25.6	80	23	58.9	3,090
Small creek, bridge over	32	46	19.9	80	23	51.8	6,670
T road west	32	46	02.8	80	23	49.9	1,735
Public-road crossing at Parkers Ferry flag station, Atlantic Coast Line Ry	32	45	32.3	80	23	46.6	3,102
Parkers Ferry flag station, 55 feet south of road crossing, 15 feet east of center of road, 1 foot north of corner fence post; iron post stamped "Prim. Trav. Sta. No. 45, 1917 Mac"	32	45	31.8	80	23	46.8	.....

Northeast along highways.

Cottageville, Prim. Trav. Sta. No. 41 (previously described)	32	56	15.0	80	28	51.5	.....
Crossroads at store	32	56	34.5	80	28	28.0	2,816
Angle in road, in front of house to east	32	56	47.6	80	27	37.1	4,536
Forks of road	32	57	06.2	80	27	34.9	1,883
Crossroads at Ackerman's store	32	57	34.0	80	27	10.4	3,504
Forks of road	32	57	49.4	80	26	47.9	2,476
Angle of about 26° in road, 0.75 mile straight, S. 65° W	32	58	12.5	80	25	49.9	5,463
Second-class crossroad	32	58	43.7	80	25	33.6	3,444
Forks of road	32	58	56.8	80	25	34.8	1,337
Log-road crossing	32	59	22.8	80	25	10.6	3,335
Forks of road	32	59	31.1	80	18	32.8	.....
Forks of road	32	58	32.7	80	18	28.2	5,916
Summerville, about 9 miles west of, at Coachmans Corners, 50 feet west of forks of road, in angle between roads; iron post stamped "Prim. Trav. Sta. No. 56, 1917 Mac"	32	58	08.5	80	18	23.2	2,489

COTTAGEVILLE QUADRANGLE—Continued.

North and northeast along highways.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Sullivans Ferry, Prim. Trav. Sta. No. 44 (previously described)	32	54	22.8	80	23	06.7	.....
Forks of road	32	54	57.9	80	23	15.4	3,631
Center of road, 5 feet east of, 18 feet west of stump blazed and marked "U. S.," nail in root of 6-inch oak tree	32	55	17.4	80	23	20.1	2,004
Crossing of bed of abandoned tram road	32	55	35.5	80	23	23.6	1,977
Crossroad	32	56	20.0	80	23	39.4	4,590
On west wagon track, in root of pine tree, 4 feet east of pine tree blazed and marked "U. S."; nail	32	56	35.6	80	23	45.8	1,665
Forks of road	32	57	30.8	80	23	50.6	5,603
Forks of road	32	57	58.2	80	23	48.5	2,766
Forks of road	32	58	16.7	80	23	22.3	2,912
Forks of road at small bridge	32	58	16.9	80	22	49.1	2,828
T road north	32	58	17.2	80	22	13.1	3,069
Forks of road	32	58	17.6	80	21	33.0	3,414
Small road bridge	32	58	18.9	80	20	30.4	5,330
Angle of 12.75° in road, center line both ways	32	58	21.0	80	19	20.1	5,994
Coachmans Corners, iron post No. 56 (previously described)	32	58	08.5	80	18	23.2	5,013
Forks of road, about 75 feet east of negro church	32	57	57.2	80	17	18.3	5,790
Angle in road, center line both ways	32	57	53.1	80	16	09.6	5,850
Ashley River bridge, center of	32	58	05.3	80	15	06.9	5,481

Magnetic declination for northeast part of quadrangle, 0.2° E.; for north part of quadrangle, 0.2° W.

Northwest along highways. (By E. L. McNair in 1917.)

Crossroads	32	50	24.3	80	15	36.2	.....
Angle in road, center line both ways	32	50	36.3	80	16	34.3	5,100
Delamar crossroads	32	50	46.4	80	17	04.6	2,780

West along highways near east border of quadrangle.

Crossroads	32	47	00.6	80	15	26.4	.....
Angle of 35° between two stretches of road	32	48	00.6	80	16	12.1	3,213
Angle in road, in line both ways	32	48	33.8	80	16	11.4	7,346
Warren crossroads, 100 feet south of store	32	49	13.4	80	16	24.0	4,150
Forks of road, 300 feet south of old church	32	49	57.7	80	16	43.2	4,764
Dorham Crossroads, on line between Dorchester and Charleston counties	32	50	46.4	80	17	04.6	5,257
Delemar Crossroads, 15 feet west of intersection, 175 feet west of Mr. Carroll's house, road east of north goes to Summerville, road north goes to Ridgeville, near fence corner; iron post stamped "Prim. Trav. Sta. No. 46, 1917 Mac."	32	51	17.4	80	17	21.3	3,433
Forks of road	32	51	56.4	80	16	59.3	4,371
Second-class road west, near fence line	32	52	14.6	80	16	26.2	3,368
T road southeast	32	52	52.2	80	16	01.9	4,319
Forks of road, dim road southeast	32	53	47.8	80	15	43.1	5,850

Magnetic declination along east border of quadrangle, 0.8° W.

CUMMINGS QUADRANGLE.

Along highways near east border of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Definite angle in road	32	45	34.7	80	45	23.9	.....
T road N. 35° E.	32	46	25.6	80	46	21.7	7,133
Forks of road	32	47	19.4	80	45	28.1	7,108
Road forks	32	51	01.2	80	45	21.0	.....
Walterboro, 7 miles west of, near Thompson's sawmill, 1 foot west of southwest corner of picket fence around residence of Frank Thompson; iron post stamped "Prim. Trav. Sta. No. 39, 1917 Mac"	32	51	22.7	80	45	34.8	2,470
Road forks	32	51	45.0	80	45	14.6	2,838

CUMMINGS QUADRANGLE—Continued.

Northwest along Charleston & Western Carolina Ry.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Private-road crossing	32	45	30.6	80	56	54.8	.....
Fechtig flag station, 840 feet northwest of, road crossing	32	46	14.8	80	57	58.2	7,010
Road crossing	32	46	28.2	80	58	17.5	2,140
Milepost 77	32	46	59.6	80	59	02.5	4,980
Cummings station, 28 feet east of road crossing just northwest of station, 23 feet from center of track, 25 feet S. 25° W. from corner of store, in line with telegraph poles, azimuth to milepost 76, 2,760 feet distant, 28° 46′ 45″; iron post stamped "Prim. Trav. Sta. No. 74, 1917 Mac"	32	47	15.5	80	59	24.9	2,497

No observations for magnetic declination.

South along highways near west border of quadrangle. (By H. S. Senseney in 1917–18.)

T road east to house	32	56	44.7	80	59	53.2	.....
Bend in road, blazed pine tree west	32	56	13.3	80	59	25.8	3,933
T road southwest, in line with road south to Tobys Bluff	32	55	39.8	80	58	25.8	6,141
Road forks	32	54	57.2	80	59	07.4	5,571
Tobys Bluff, north end of most northern of several bridges	32	54	38.2	80	59	23.6	2,369
Railroad crossing	32	53	19.3	80	59	50.1	.....
Varnville, 4.5 miles northeast of, 750 feet south of logging railroad, 20 feet north and 45 feet west of road forks; iron post stamped "Prim. Trav. Sta. No. 2 S, 1917." Azimuth to nail in root of oak tree, 520 feet distant (stadia), on north side of road, 90° 03′ 45″	32	53	13.0	80	59	45.2	758
Road forks, at mail box 21	32	52	53.5	80	59	04.5	3,993
Second-class road crossing, at nine mail boxes	32	51	54.8	80	58	00.0	8,084
T road to house, at mail box 28	32	51	38.3	80	57	36.7	2,600
Gate through which road passes	32	51	04.0	80	56	47.4	5,447
T road southwest	32	50	08.0	80	55	38.6	8,161
Road fork, at gate near schoolhouse	32	49	31.6	80	57	13.3	8,882
T road south	32	49	31.2	80	57	56.6	3,696
T road north, at mail box 91	32	49	27.6	80	58	04.8	789
T road south, at mail box 51	32	49	14.5	80	58	27.4	2,334
Road forks, at gate and mail box 40	32	48	40.0	80	59	27.2	6,181

East along highways through center of quadrangle.

T road southwest, in line with road south to Tobys Bluff	32	55	39.8	80	58	25.7	.....
Road fork, 900 feet southeast of another road fork	32	55	24.6	80	57	59.7	2,700
Road forks	32	55	07.1	80	57	33.2	2,870
Road forks	32	54	47.7	80	57	07.4	2,946
Road forks	32	54	30.9	80	56	37.0	3,098
Islandton, T road north, east of schoolhouse	32	54	31.1	80	56	06.6	2,595
T road south	32	54	31.4	80	55	24.0	3,630
Crossroads	32	54	18.7	80	54	29.1	4,860
Deep Creek Church, T road south at	32	53	54.8	80	53	52.0	3,985
T road north	32	53	37.8	80	53	14.1	3,663
Colleton Cypress Lumber Co.'s logging camp, 245 feet east of store, 15 feet north of road; iron post stamped "Prim. Trav. Sta. No. 1 S, 1918." Azimuth to southeast corner of chimney of store, 94° 10′ 20″	32	53	19.3	80	52	43.2	3,225
Lane north to house	32	53	15.0	80	51	40.6	5,360
Crossroads	32	53	19.2	80	51	09.6	2,680
Center of road, in line with T road south	32	53	23.4	80	50	13.3	4,826
Road forks, blazed pine tree south	32	53	22.5	80	49	48.9	2,079
Crossroads at sawmill	32	53	24.0	80	49	20.7	2,415
T road south	32	53	20.0	80	48	31.7	4,195
Road forks, east of mail box 35	32	52	44.2	80	47	38.8	5,793
Lane south, at mail box 36	32	52	40.4	80	47	14.2	2,129
T road north, at mail box 41	32	52	38.0	80	46	54.4	1,709
Road forks	32	52	23.9	80	45	49.6	5,713
Lane east, at mail box 43	32	52	00.1	80	45	51.4	2,417
T road east	32	51	35.0	80	45	42.8	2,634
Thompson's sawmill, near "Prim. Trav. Sta. No. 39, 1917 Mac." (previously described)	32	51	22.7	80	45	34.8	1,418
Cummings, Prim. Trav. Sta. No. 74 (previously described)	32	47	15.5	80	59	24.9	.....
Road forks, at mail box 41	32	47	00.1	80	59	29.8	1,610
Road forks	32	46	41.0	80	59	50.3	2,607

Magnetic declination for west border of quadrangle, 0.1° E.; through center of quadrangle, 0.2° W.

CUMMINGS QUADRANGLE—Continued.

West along highways near north border of quadrangle. (By H. S. Senseney in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Second-class road south, at mail box 14, blazed pine tree north	32	59	24.8	80	50	12.1	.....
T road north	32	59	03.3	80	50	37.8	3,087
Bells crossroads	32	58	43.8	80	51	02.8	2,906
Road forks, east of church	32	59	03.2	80	51	36.1	3,440
Railroad crossing	32	59	31.0	80	52	40.8	6,192
Crossroads	32	59	36.6	80	53	02.2	1,905
Road forks	32	59	54.9	80	53	51.4	4,586
Crossroads	32	59	50.7	80	54	22.9	2,717
East end of bridge	32	59	44.3	80	54	58.5	3,095
Road forks	32	59	27.5	80	55	33.2	3,414
Railroad crossing	32	59	30.7	80	56	01.4	2,426
Crossroads	32	59	37.9	80	56	21.9	1,890
Road forks	32	59	47.1	80	57	12.9	4,443
Center of triangle made by road forks, at abandoned house	32	59	50.8	80	57	17.8	564
Crossroads	32	59	41.2	80	57	52.2	3,084
T road south at Nat. Williams's mail box	32	59	30.8	80	58	21.1	2,679
Center of road in line with T road south	32	59	25.0	80	58	41.4	1,830
Railroad crossing at milepost 11, main line	32	59	23.5	80	59	36.4	4,683

No magnetic declination.

Southeast along Atlantic Coast Line R. R. (By E. L. McNair in 1917–18.)

Intersection of long tangents	32	59	52.9	80	48	29.8	.....
Road crossing	32	59	27.8	80	47	31.6	5,565
Road crossing	32	59	09.9	80	46	52.2	3,813
Road crossing, at milepost 21	32	58	58.1	80	46	28.1	2,375
Road crossing	32	58	40.4	80	45	52.1	3,555
Intersection of long tangents, 730 feet west along track to road crossing, 555 feet east along track to road crossing	32	58	24.9	80	45	20.5	3,110

EDGEFIELD QUADRANGLE.

East along highways near south edge of quadrangle. (By B. H. Yoakum in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Edgefield, 2.5 miles south of, 0.5 mile southwest of junction of stage road and plank road, at old frame tenement house, on root of 2.5-foot pine tree; copper nail and washer	33	45	49.1	81	55	00.8	.....
Edgefield, about 3 miles southeast of, 300 feet S. 45° W. from road crossing on Southern Ry. at Parkhill station, 35 feet east of plank road, in triangle formed by road forks; iron post stamped "Prim. Trav. Sta. No. 9, 1918 Y"	33	45	46.1	81	53	47.8	6,175
Private lane south, at post marked "4 miles to Edgefield"	33	45	03.2	81	52	53.2	6,324

Magnetic declination near south edge of quadrangle, 0.40° E.

West along north border of quadrangle. (By E. L. McNair in 1919.)

Center of bridge over Red Bank Creek	33	59	33.2	81	49	37.5	.....
Crossroads	33	59	10.2	81	49	52.2	2,643
Forks of road, three directions	33	58	54.5	81	50	23.7	3,086
Saluda, 5 miles west of, at location of former post office named Limp, 150 feet west of John Davis's residence, 20 feet east of center of north and south road from Edgefield to Newberry, 4 feet southeast of telephone pole; iron post stamped "Prim. Trav. Sta. No. 5, 1919 Mac." Azimuth to cupola on Plum Branch School, 145° 33′ 15″	33	59	15.4	81	51	08.3	4,308
Forks of road, 25 feet southeast of small bridge	33	59	16.5	81	51	32.2	2,017
Forks of road	33	59	15.4	81	52	11.0	3,270
Crossroads	33	59	00.4	81	52	45.5	3,278
Forks of road	33	58	53.6	81	53	09.3	2,118
Forks of road	33	58	51.6	81	53	12.8	361
Second-class crossroad	33	59	17.6	81	54	06.8	5,250
Creek crossing	33	59	29.2	81	54	33.2	2,511
Small creek crossing, no bridge	33	59	58.9	81	55	13.5	4,533
Crossroads, mail box is 12 feet S. 40° W	33	59	50.1	81	55	52.1	3,369
Crossroad	33	59	33.5	81	56	29.0	3,526
T road corner, about 200 feet southeast of blacksmith shop	33	59	37.8	81	56	40.2	1,043
Center of bridge over Sleepy Creek	33	59	01.6	81	57	17.1	4,801

EDGEFIELD QUADRANGLE—Continued.

West along north border of triangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Celestia School, 0.5 mile southeast of, at T road westerly, 150 feet east of Ed. Faulkner's house, 15 feet northwest of center of road; iron post stamped "Prim. Trav. Sta. No. 6, 1919 Mac." Azimuth to left-hand edge of chimney in center of house of J. B. Chandler, 304° 43′ 35″	33	59	02.1	81	58	12.4	4,662
Creek crossing, no bridge	33	58	50.9	81	58	28.4	1,757
Crossroad	33	58	37.3	81	59	21.1	4,647

South through southwest quarter of quadrangle.

Crossroad	33	52	35.6	81	59	52.6	.....
Pleasant Lane, 2.25 miles south of, on road to Edgefield, 50 feet south of public crossroad, 15 feet south of center of road; iron post stamped "Prim. Trav. Sta. No. 8, 1919 Mac." Azimuth to nail, 7 feet above ground inside of third telephone pole south of post, 338° 51′ 55″	33	52	18.7	81	59	44.5	1,847
Center of bridge over Log Creek	33	51	49.1	81	59	11.8	4,066
T road west	33	51	30.6	81	59	00.6	2,087
Road westerly, at south edge of, at yard fence 195 feet south of Nicholson's mail box	33	50	52.0	81	58	43.6	4,152
Forks of road, road west to Abbeville, road northwest to Greenwood, road southeast to Edgefield	33	49	40.3	81	57	51.3	8,487
Forks of road	33	49	23.0	81	57	16.5	3,417
T road southwest	33	48	53.6	81	56	33.7	4,679
T road corners	33	48	41.0	81	55	47.7	4,081
Forks of road at top of hill	33	47	53.4	81	55	50.3	4,813
Edgefield, cross in top of granite stone, stone marked "XIII Lofton," on side	33	47	23.4	81	55	47.8	3,034

South through northeast corner of quadrangle along railroad track.

Crossroad at Saluda, 500 feet west of St. Paul's M. E. Church	34	00	14.1	81	46	11.1	.....
Center of main track, at road crossing, 95 feet southeast of Saluda station	33	59	51.0	81	46	13.3	2,332
Public-road crossing	33	59	39.6	81	45	54.2	1,974
Center of track, at center of crossing of Little Saluda River	33	59	24.1	81	45	51.9	1,577
Road crossing	33	58	37.7	81	46	12.4	4,990
Road crossing	33	55	02.0	81	46	03.7	3,683
Stream crossing	33	57	28.9	81	45	43.3	3,754
Road crossing	33	57	10.2	81	45	34.8	2,023
Creek crossing	33	56	55.5	81	45	24.6	1,710

West through south half of quadrangle. (By Oscar Jones in 1919.)

T road south	33	51	13.4	81	45	07.8	.....
Road forks	33	50	53.5	81	46	03.7	5,130
Road forks	33	50	36.7	81	47	13.1	6,090
Crossroads	33	51	13.6	81	48	06.1	5,819
Center of road, opposite house, 70 feet south of road forks	33	51	32.0	81	48	30.7	2,793
T road south	33	51	54.2	81	50	02.1	8,026
Center of road, opposite house on north and well on south	33	52	31.2	81	50	51.6	5,601
Crossroads	33	53	06.2	81	51	51.8	6,192
Edgefield, 8 miles northeast of, at southeast corner of Mathews crossroads; iron post stamped "Prim. Trav. Sta. No. 91 J, 1919"	33	53	29.0	81	52	09.7	2,746
Road fork	33	52	50.3	81	52	18.2	3,980
Center of bridge over Turkey Creek	33	52	10.0	81	52	51.5	4,958
Center of bridge	33	51	43.1	81	53	14.2	3,325
Road fork	33	51	32.9	81	53	14.6	1,027
Forks of three roads	33	51	03.9	81	53	13.8	2,930
Creek crossing	33	50	36.2	81	53	53.8	4,387
Road fork	33	50	12.4	81	54	08.8	2,717
Center of road, opposite church	33	49	39.4	81	54	16.5	3,407
Creek crossing	33	48	55.0	81	54	56.6	5,622
Road fork	33	48	27.3	81	55	27.7	3,833
Crossroads	33	48	13.6	81	55	41.3	1,802
Road fork at top of hill	33	47	53.3	81	55	50.3	2,195
Edgefield; granite post, cross in top, marked "XIII Lofton" on side	33	47	23.4	81	55	47.8	3,027
Road fork	33	46	28.7	81	55	04.8	6,613

EDGEFIELD QUADRANGLE—Continued.

West through south half of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork	33	46	15.4	81	54	44.7	2,166
Edgefield, 3 miles southeast of, 300 feet south and 45 feet west of road crossing on Southern Ry., at Park Hill station; iron post stamped "Prim. Trav. Sta. No. 9 Y, 1918"	33	45	46.1	81	53	47.8	5,649
Center of bridge	33	47	21.4	81	56	07.4	.....
Road fork	33	47	12.7	81	56	42.2	3,063
Road fork south	33	47	26.9	81	57	37.0	4,840
Road forks	33	47	36.6	81	57	59.6	2,149
Road forks	33	47	57.8	81	58	32.9	3,530
Road forks	33	47	38.0	81	59	06.9	3,500
Road forks	33	47	21.3	81	59	25.1	2,280
Crossroads	33	47	22.6	81	59	50.3	2,129

Magnetic declination through south half of quadrangle, 00° 00′; along north border, 00° 02′ W.; in southwest quarter, 00° 16′ E.; along east border, 00° 07′ W.

Northeast along Southern Ry. (By George T. Hawkins in 1918.)

Road crossing	33	44	55.4	81	50	18.4	.....
Road crossing	33	45	34.9	81	50	19.1	3,994
Road crossing at house	33	45	56.2	81	50	20.5	2,151
Road crossing, 20 feet southwest of crossing sign	33	46	45.3	81	50	26.9	5,004
Banknight, road crossing at	33	47	13.7	81	50	05.7	3,379
Road crossing, 20 feet northeast to sign	33	48	07.1	81	49	21.4	6,570
County-road crossing, road runs north and south	33	48	51.5	81	48	44.6	5,460
Road crossing	33	49	02.3	81	48	35.7	1,320
Joint on south rail, main line, on road crossing southeast of Johnston station	33	49	50.1	81	48	05.6	5,465
Private-road crossing	33	50	14.0	81	47	35.6	3,503
Road crossing	33	50	29.3	81	46	53.6	3,871
Second-class road crossing	33	50	47.5	81	46	03.2	4,629
Road crossing, 20 feet northeast of crossing sign	33	51	05.4	81	45	04.1	5,300

No declination observed.

EDISTO ISLAND QUADRANGLE.

Along Seaboard Air Line Ry. near west border of quadrangle. (By E. L. McNair, 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Ashepoo siding, public-road crossing	32	38	08.6	80	29	56.2	.....
Ashepoo siding, on Seaboard Air Line Ry., 450 feet N. 25° W. from public-road crossing, 15 feet east of center of road, 2 feet from wire fence; iron post stamped "Prim. Trav. Sta. No. 36, 1917 Mac." Azimuth of railroad track, 248° 08′; Azimuth to wire nail in pine tree, 300 feet distant, 150° 5′	32	38	12.6	80	29	58.5	449

Along Seaboard Air Line Ry. northeast through quadrangle. (By E. L. McNair in 1917.)

Meggetts station, about 7.5 miles southwest of, at main public-road crossing to Edisto Island, 100 feet northeast of road crossing, 25 feet north of railroad track, in line of telephone poles; iron post "Prim. Trav. Sta. 37, 1917 Mac", azimuth of railroad tangent, 248° 10′ 30″	32	41	10.3	80	21	02.0	.....
Farm-road crossing	32	41	19.3	80	20	34.4	2,499
Public-road crossing	32	41	37.7	80	19	39.9	5,016
Crossing of Atlantic Coast Line R. R. branch line and Seaboard Air Line Ry.	32	41	45.9	80	19	15.6	2,240
Public-road crossing	32	41	55.4	80	18	48.3	2,520
Crossing of Atlantic Coast Line R. R. branch line and Seaboard Air Line Ry.	32	42	16.8	80	17	45.0	5,830
Second-class road crossing	32	42	36.0	80	16	48.2	5,224
Public-road crossing	32	42	44.6	80	16	23.0	2,325
Public-road crossing	32	43	05.0	80	15	22.5	5,570

EDISTO ISLAND QUADRANGLE—Continued.

From Edisto Island northwest along highway to Seaboard Air Line Ry.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road northeast through gate to Johnstone place	32	32	21.2	80	15	39.0	.....
Forks of road, near store	32	33	06.3	80	16	39.9	6,920
Edisto Island post office, small creek bridge near	32	33	37.6	80	16	47.4	3,234
Road northeast, near a church	32	34	21.3	80	17	04.7	3,234
Murray's store, cypress-tree plantation, 15 feet south and 30 feet west of cross roads, on slight bank 20 feet north of old store building; iron post stamped, "Prim. Trav. Sta. No. 47, 1917"	32	34	42.9	80	17	50.9	4,513
Center of road, in front of church on north side of road	32	34	45.1	80	18	29.7	3,330
T road south	32	34	38.3	80	19	27.5	4,994
T road north, 500 feet west of road forks	32	34	51.8	80	20	11.8	4,022
T road (at second-class road)	32	34	55.1	80	20	44.2	2,800
T road north, 1,080 feet west of T road south	32	35	21.9	80	21	42.5	5,676
Road bridge	32	36	06.1	80	21	42.6	4,465
Cross roads	32	36	14.6	80	21	12.1	3,708
Angle of 48° 15′ in road, intersection of center lines	32	36	32.4	80	20	55.5	2,294
Second-class T road east	32	37	08.3	80	20	37.9	3,928
Edisto Island ferry landing, 3,460 feet southeast of; a 1¼-inch pipe in center of a 6-inch tile pipe filled with concrete, marked "U S B M. 1909"	32	37	47.9	80	20	07.5	4,773
Edisto Island ferry landing, north side of Dawho River, end of road	32	38	15.5	80	20	31.3	3,460
Angle of 48° in road, intersection of center lines, about 10 feet west of wagon track	32	39	02.8	80	20	42.9	4,878
Forks of road, near store	32	39	39.5	80	20	24.6	4,020
Forks of road southeast, at store, 430 feet southeast of fork with road west	32	40	32.0	80	20	53.2	5,840
Prim. Trav. Sta. No. 37, 1917 Mac (previously described)	32	41	10.3	80	21	02.0	3,946

Magnetic declination in southeast part of quadrangle, 0.6° W.

Northeast along railroad. (By E. L. McNair in 1917.)

Prim. Trav. Sta. No. 36, 1917 (described above)	32	38	12.6	80	29	58.5	.....
Ashepoo River bridge, center of draw span	32	38	32.7	80	28	45.2	6,587
Center of main track, in line with tangent in branch line southeast	32	39	05.8	80	27	07.7	8,982
Milepost 198	32	39	27.7	80	26	03.3	5,940
Edisto River, center of swing span	32	39	50.7	80	24	55.4	6,250
Second-class road crossing	32	40	06.1	80	24	10.1	4,170
Second-class road-crossing	32	40	17.7	80	23	36.2	3,130
Road crossing, 325 feet north of milepost 195	32	40	25.0	80	23	14.6	1,985
Second-class road crossing	32	40	34.9	80	22	45.6	2,678
Second-class road crossing	32	40	52.0	80	21	55.1	4,650
Intersection of road with branch of Atlantic Coast Line R. R	32	41	06.9	80	21	11.2	4,038
Public-road crossing	32	41	09.7	80	21	03.0	760
Prim. Trav. Sta. No. 37 (described above)	32	41	10.3	80	21	02.0	102

Magnetic declination along Seaboard Air Line Ry. in north half of quadrangle, 0° 38′ E.; along highways in east half, 0° 36′ W.

EDMUND QUADRANGLE.

North along west border of quadrangle. (By E. L. McNair in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	33	45	32.9	81	14	53.6	.....
Pelion station, 80 feet south of, 19 feet east of center of track; iron post stamped "Elev. 391"; azimuth to church steeple, 137° 06′ 12″	33	45	46.35	81	14	43.35	1,615

EDMUND QUADRANGLE—Continued.

North along road to Lexington.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroad	33 55 05.8	81 14 56.7	
Red Bank, 0.2 mile southwest of, center of crossroads	33 55 34.8	81 14 41.1	3,218
Red Bank Creek, center of bridge over	33 55 44.2	81 14 32.9	1,177
Road forks	33 56 32.8	81 14 11.2	5,246
Crossroads	33 56 39.8	81 14 09.8	719
Lexington station, 1.1 miles south of, center of crossroads	33 57 06.9	81 14 03.4	2,791
Lexington, Prim. Trav. Sta. No. 47, 1918 H (described below)	33 58 02.80	81 14 00.97	5,653

From west border of quadrangle east to Lexington.

Crossroads, Aiken, Columbia, and Newberry	33 59 11.8	81 14 43.1	
Lexington, southeast corner of courthouse yard, center of street crossing	33 58 51.8	81 14 09.9	3,449
Center of iron bridge	33 58 24.5	81 14 09.4	2,763
Lexington, Prim. Trav. Sta. No. 47, 1918 H (described below)	33 58 02.80	81 14 00.97	2,305

Magnetic declination near west border of quadrangle, 0° 23′ W.

Northwest along State road to Columbia. (By Oscar Jones in 1919.)

Road fork	33 51 06.4	81 00 31.4	
Center of bridge	33 51 31.3	81 00 46.6	2,830
Crossroads	33 51 59.1	81 01 04.1	3,160
U. S. permanent bench-mark post stamped "Elev. 180" (179.9)	33 52 38.41	81 01 28.38	4,471
Center of bridge at mill	33 52 57.6	81 02 48.2	7,002
Crossroads	33 53 05.0	81 03 10.6	2,031
Road fork to Swansea	33 54 08.5	81 03 54.4	7,402
U. S. Coast and Geodetic Survey triangulation station Logan, 1918, about 1 mile south of Dixiana, on Seaboard Air Line Ry	33 54 28.61	81 04 04.21	2,195

From east border of quadrangle northwest along Southern Ry. to Columbia.

Columbia, 4.1 miles southeast of, in village of Arthur, on west edge of Bluff Road, at southeast corner of dwelling; iron post stamped "Elev. 169"	33 57 36.56	81 00 06.86	
Center of concrete bridge	33 58 03.0	81 00 45.8	4,223
Road fork, at southwest corner of State fair grounds	33 58 33.6	81 01 30.6	4,886
Crossing of Atlantic Coast Line R. R. and electric line, at Bluff Road	33 59 02.8	81 01 40.4	3,064

Magnetic declination for quadrangle, 0° 14′ W.

From south border of quadrangle north through west part of quadrangle. (By G. T. Hawkins in 1918.)

Five corners, 150 feet south of church	33 45 27.0	81 10 08.6	
Opposite mail box, at T road east	33 47 21.3	81 10 52.1	12,124
Crossroads, 20 feet southwest of mail box	33 48 27.7	81 11 18.2	7,063
Crossroads, 600 feet north of church	33 50 05.8	81 12 07.6	10,760
Edmund, 20 feet east of railroad, 60 feet northeast of station, 2 feet southeast of crossing sign; iron post stamped "Prim. Trav. Sta. No. 58, 1918 H"	33 51 41.84	81 12 01.32	9,722
Crossroads	33 52 41.9	81 13 02.1	7,944
Forks at house	33 53 08.7	81 13 22.7	3,223
Second-class crossroads, 200 feet northeast to new church	33 53 54.6	81 13 12.0	4,726
Second-class crossroads	33 54 39.9	81 13 05.6	4,616
Second-class crossroads	33 55 06.7	81 13 05.9	2,710
Second-class crossroads	33 56 21.4	81 13 26.8	7,744
Road crossing	33 57 14.1	81 13 50.5	5,696
Lexington, "Prim. Trav. Sta. No. 47, 1918 H" (described below)	33 58 02.80	81 14 00.97	5,000

Magnetic declination along west border of quadrangle, 0° 12′ W.

EDMUND QUADRANGLE—Continued.

East along Southern Ry. in north part of quadrangle. (By George T. Hawkins in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing, 20 feet east of crossing sign	33	57	30.1	81	14	33.0	.....
Lexington railroad station	33	58	02.3	81	14	02.3	4,159
Lexington railroad station (Bull. 181, p. 150), astronomic value	33	57	58.3	81	14	05.2	.....
Lexington, 10 feet south of railroad, 30 feet east of road crossing, 3 feet north of sign; iron post stamped "Prim. Trav. Sta. No. 47 H, 1918"	33	58	02.80	81	14	00.97	122
Road crossing	33	58	14.2	81	13	33.8	2,563
Road crossing	33	58	18.9	81	12	59.0	2,969
Second-class road crossing	33	58	23.2	81	11	47.7	6,020
Second-class road crossing	33	58	27.2	81	10	45.2	5,281
Road crossing, 150 feet south of county road	33	58	28.8	81	10	20.9	2,050
Road crossing, 40 feet southwest of crossing sign	33	58	29.6	81	10	06.3	1,230
Arthur, road crossing	33	58	15.4	81	08	45.0	6,990
Arthur, 0.5 mile east of, 20 feet southwest of road crossing, 30 feet south of railroad; iron post stamped "Prim. Trav. Sta. No. 52 H, 1918"	33	58	17.98	81	08	16.24	2,440
County-road crossing	33	58	37.2	81	07	11.9	5,755
Second-class road crossing	33	58	37.2	81	06	05.4	5,600
Second-class road crossing	33	58	32.4	81	05	26.6	3,308
Station 330=station 146, tie point	33	58	21.06	81	03	41.21	8,945

North along Seaboard Air Line Ry.

Second-class road crossing	33	45	06.7	81	06	18.6	.....
Road crossing	33	45	34.3	81	06	25.4	2,841
County-road crossing	33	46	08.9	81	06	23.5	3,500
Road crossing, at head block at blind siding	33	46	46.7	81	06	21.3	3,821
Road crossing, 20 feet southeast of crossing sign post	33	47	56.6	81	06	17.3	7,080
Second-class road crossing	33	48	15.4	81	06	16.2	1,900
County-road crossing	33	48	44.8	81	06	14.6	2,970
Gaston, U. S. Coast and Geodetic Survey traverse station, on Seaboard Air Line Ry. right of way, at curve, about 300 meters south of depot, at intersection of prolongation of northward tangent to curve of east rail of main track and southward tangent to curve of west rail, 6.03 meters west of west rail of main track; standard disk set in top of square block of concrete; a block of concrete 3 feet below ground containing at center of its upper surface a copper bolt projecting slightly above concrete	33	48	56.46	81	06	13.90	1,180
County-road crossing	33	49	12.88	81	06	09.6	1,703
Top, traverse station of U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, on east bank of second cut, about 1 mile north of Gaston railroad station, 550 meters south of milepost 266, 300 meters north of a public-road crossing, 0.25 mile north of curve, about 10 meters east of railroad tracks, 6 meters above track. Reference mark, distant 25.23 meters, 325 meters south of private-road crossing; about 10 meters east of east rail of tracks and about 6 meters above track. Surface station mark: A standard disk set in top of a square block of concrete	33	50	07.76	81	05	54.18	5,708
Road crossing	33	50	16.8	81	05	52.1	934
Top A, traverse station of the U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, at curve at milepost 226, 1.5 miles north of Gaston railroad station, at intersection of tangents to curve of east rail of main track, 2.12 meters west of west rail; standard disk in top of square block of concrete	33	50	24.52	81	05	50.03	788
Road crossing	33	50	43.5	81	05	42.6	2,020
Road crossing	33	51	15.9	81	05	45.1	3,279
Top C, traverse station of U. S. Coast and Geodetic Survey, just west of Seaboard Air Line Ry. right of way, at curve at milepost 267, about 2.5 miles north of Gaston railroad station, at intersection of tangents to curve of east rail of main track, 49.53 meters west of west rail (U. S. C. & G. S. b. m. H_2). Reference mark, distant 60.33 meters; station mark, a standard disk in top of square block of concrete	33	51	24.64	81	05	50.88	1,007
Road crossing	33	51	41.4	81	05	41.8	1,862
Top D, traverse station of the U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, near highest point of track, 650 meters north of milepost 267, about 3 miles north of Gaston railroad station, 140 meters north of private-road crossing, 1.77 meters east of east rail of main track; standard disk in top of square block of concrete	33	51	45.41	81	05	39.69	442

EDMUND QUADRANGLE—Continued.

North along Seaboard Air Line Ry.—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Top E, traverse station of the U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, at curve 170 meters north of milepost 268, about 3.5 miles north of Gaston railroad station, on prolongation of southward tangent to curve of east rail of main track, 16.56 meters west of west rail. Reference mark, distant 18.58 meters, 13.67 meters west of west rail of main track; station mark, a standard disk in top of square block of concrete	33 52 09.08	81 05 27.12	2,617
Top F, traverse station of the U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, on curve 510 meters north of milepost 268, about 4 miles north of Gaston railroad station, 11.46 meters west of west rail of main track, about 1 meter above track; standard disk in top of square block of concrete	33 52 13.40	81 05 15.09	1,104
Top G, traverse station of the U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, at south end of curve, 600 meters south of milepost 269, about 4.75 miles north of Gaston railroad station, on prolongation of southward tangent to curve of west rail of main track, 10.74 meters east of east rail; standard disk in top of square block of concrete	33 52 09.51	81 04 56.71	1,599
Road crossing, 20 feet northeast to bench mark	33 52 11.7	81 04 45.8	960
Top H, traverse station of the U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, at north end of curve, 320 meters south of milepost 269, about 5 miles north of Gaston railroad station, on prolongation of northward tangent to curve of west rail of main track, 8.6 meters east of east rail (U. S. C. & G. S. b. m. I_2). Reference mark, distant 27.56 meters; station mark, a standard disk in top of square block of concrete	33 52 11.98	81 04 44.42	107
Top I, traverse station of U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, at milepost 269, about 5 miles north of Gaston railroad station, 11.62 meters southwest from milepost and 2.24 meters west of west rail of main track; standard disk in top of square block of concrete	33 52 18.07	81 04 35.72	958
Picardy, traverse station of the U. S. Coast and Geodetic Survey, on wooded hill on west side of Seaboard Air Line Ry. track, between mileposts 269 and 270, about 10 miles south of Columbia, on prolongation of northward tangent to curve at milepost 270, and 600 meters southeast from point of tangent; standard disk in top of square block of concrete	33 52 27.64	81 04 40.62	1,052
Picardy A, traverse station of U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, at curve, 230 meters south of milepost 270, at intersection of prolongation of northward tangent to curve of east rail and southward tangent to curve of west rail, 37.11 meters west of west rail; standard disk in top of square block of concrete	33 53 06.19	81 05 00.17	4,231
Road crossing	33 53 15.2	81 04 55.0	1,015
Picardy B, traverse station of the U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, 540 meters south of milepost 271, about 8 miles south of Columbia railroad station, at intersection of tangents to curve of east rail of main track, 5.80 meters east of east rail, 20 meters south of a whistling post, about 1 meter above the track; standard disk in top of square block of concrete	33 53 30.84	81 04 46.03	1,746
Road crossing, 20 feet southeast of crossing sign	33 53 37.6	81 04 43.7	720
Picardy C, traverse station of the U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, at curve 800 meters south of milepost 272, 1 mile south of Dixiana railroad station, at intersection of prolongation of northward tangent to curve of west rail of main track and southward tangent to curve of east rail, about 30 meters west of west rail, 5 meters above track; standard disk in top of square block of concrete	33 54 11.76	81 04 31.90	3,585
Road crossing under railroad	33 54 18.4	81 04 20.9	1,150
Logan, traverse station of the U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, at curve at milepost 272, 0.5 mile south of Dixiana railroad station, at intersection of prolongation of southward tangent to curve of west rail of main track and northward tangent to curve of east rail, 14.48 meters east of east rail, 15 meters south of a public-road crossing; standard disk in top of square block of concrete	33 54 28.61	81 04 04.21	1,738
Dixiana, railroad crossing	33 55 08.8	81 03 33.6	4,811
Dixiana, traverse station of the U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, at curve at Dixiana railroad station, 28 meters south of milepost 273, at intersection of tangents to curve of east rail of main track, 13.37 meters east of east rail, a private road runs between the station and the tracks; standard disk in top of square block of concrete.	33 55 11.01	81 03 31.75	274
Road crossing	33 55 37.5	81 03 24.6	2,746

EDMUND QUADRANGLE—Continued.

North along Seaboard Air Line Ry.—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Kid, traverse station of the U. S. Coast and Geodetic Survey, on Seaboard Air Line Ry. right of way, at curve at milepost 275, about 1 mile south of southern limit of yard at Cayce railroad station, at intersection of prolongation of northward tangent to curve of west rail of main track and southward tangent to curve of east rail, 20.21 meters east of east rail; standard disk in top of square block of concrete	33	56	59.06	81	03	02.60	8,441
Road crossing, 20 feet northeast to U. S. Coast and Geodetic Survey bench mark	33	57	16.4	81	03	09.2	1,840
Road crossing	33	57	36.3	81	03	16.7	2,100
Cayce, station on main line of Seaboard Air Line Ry.; joint on rail at crossing	33	58	24.5	81	03	05.0	4,967
Cayce, railroad station (Bull. 181, p. 150)	33	58	26.5	81	03	15.9	934
Astronomic value	33	58	22.6	81	03	15.9	.....
Cayce, joint on south rail, junction point	33	58	21.06	81	03	41.20	2,195

No declination observed.

ELLIOT QUADRANGLE.

West along south border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks, at schoolhouse	34	00	18.1	80	00	33.4	.....
T road southeast at county line	34	00	47.5	80	01	16.7	4,706
Road forks	34	00	20.8	80	01	40.4	3,356
T road southeast	34	00	05.6	80	03	46.6	.....
Road forks	34	00	57.2	80	04	39.2	6,839
T road southeast	34	01	38.4	80	05	39.8	6,586
T road northwest, east side of road, 4 feet northeast of bridge, 0.5 mile southeast of Atkins; iron post stamped "Prim. Trav. Sta. No. 50 J, 1918"	34	01	16.5	80	06	06.5	3,153
Atkins depot, east side of railroad crossing, 318 feet east of center operation window	34	02	16.0	80	06	54.6	7,252
Second-class road crossing	34	01	45.4	80	07	49.5	5,559
Second-class road crossing	34	01	32.7	80	08	12.5	2,320
Second-class road crossing	34	01	19.1	80	08	36.8	2,470
Second-class road crossing	34	01	06.0	80	09	00.4	2,380
Public-road crossing	34	00	41.0	80	09	45.4	4,560
Public-road crossing	34	00	20.0	80	10	23.0	3,810

Magnetic declination for south border of quadrangle, 00° 57′ W.

ELLOREE QUADRANGLE.

Southwest along Atlantic Coast Line R. R. across center of quadrangle. (By Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Rimini, 500 feet north of depot, south side of public road at crossing, west side of track, 4 feet north of crossing sign; iron post stamped "Prim. Trav. Sta. No. 63 J, 1919"	33	40	07.79	80	30	03.38	.....
North end of trestle over Santee River	33	39	25.7	80	30	55.8	6,138
North end of steel bridge over Santee River	33	38	38.8	80	31	56.9	7,010
South end of steel bridge over Santee River	33	38	34.9	80	32	02.0	585
South end of tangent, angle iron with X in center of track	33	38	10.0	80	32	34.3	3,709
North end of tangent, angle iron with X in center of track	33	38	04.3	80	32	46.3	1,162
Road crossing	33	38	00.8	80	33	04.9	1,610
Road crossing	33	37	49.5	80	34	05.1	5,220
Center of trestle, public road under	33	37	44.2	80	34	33.4	2,450
Lonestar, 1,600 feet south of depot, 18 feet west of track, 10 feet south of public road, 2 feet south of crossing sign; iron post stamped "Prim. Trav. Sta. No. 64, J, 1919"	33	37	23.55	80	35	36.81	5,748
Road crossing	33	36	42.3	80	37	06.0	8,919
Road crossing	33	36	25.4	80	37	52.3	4,265

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ELLOREE QUADRANGLE—Continued.

Southwest along Atlantic Coast Line R. R. across center of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of steel-girder bridge over creek	33	36	08.2	80	38	14.7	2,569
Creston depot, center of track, opposite semaphore	33	35	39.8	80	38	39.8	3,572
Road crossing	33	35	20.3	80	39	06.2	2,980
Road crossing	33	34	55.7	80	39	55.4	4,840
Road crossing	33	34	26.2	80	40	54.2	5,800
Road crossing	33	34	09.8	80	41	26.7	3,210
Road crossing	33	33	51.3	80	42	03.6	3,640
Cameron, Atlantic Coast Line R. R. and State road crossing, 1,400 feet northeast of depot, south side of State road, west of track, 3 feet south of crossing sign; iron post stamped "Prim. Trav. Sta. No. 74 J, 1919"	33	33	33.51	80	42	39.06	3,552
Road crossing, Cameron and Orangeburg road	33	33	07.3	80	43	31.3	5,098
Road crossing	33	32	27.5	80	44	50.3	7,800

No magnetic declination given.

From Lonestar southeast along public road to Parler, in southeast corner of quadrangle.

Lonestar Primary Traverse post No. 64 J (previously described)	33	37	23.55	80	35	36.81	.....
Center of small bridge	33	36	52.4	80	35	06.6	4,056
Center of bridge, middle one of three, on Halfway Swamp	33	35	54.4	80	34	22.0	6,969
T road southwest	33	35	14.9	80	33	39.5	5,373
Crossroads	33	34	49.4	80	33	54.0	2,850
Crossroads	33	34	17.9	80	34	11.9	3,530
Crossroads	33	33	24.4	80	34	37.0	5,803
T road northeast	33	32	44.4	80	35	05.7	4,720
Elloree, crossing of Main Street and Monks Corner and Columbia roads, brick store of Elloree Hardware Co. on northeast corner, brick wall 5 feet east	33	31	50.0	80	34	19.6	6,737
Center of bridge	33	31	24.3	80	33	53.4	3,419
T road southwest	33	30	48.9	80	33	04.2	5,487
Jerusalem Church and graveyard, north side of public road, in line with brick wall and 11 feet west of southwest corner; iron post stamped "Prim. Trav. Sta. No. 65 J, 1919"	33	30	35.22	80	32	41.65	2,362

Mean magnetic declination, 16′ W.

Northwest along State road to Cameron.

Cedar Grove School, road fork at	33	30	19.9	80	39	56.8	.....
Gate to F. M. Dantzler's house, center of road opposite	33	30	48.4	80	40	20.6	3,520
Road fork	33	31	13.4	80	40	41.6	3,099
T road northeast	33	31	51.3	80	41	13.3	4,670
Center of bridge	33	32	04.3	80	41	24.3	1,620
Road fork south	33	32	30.0	80	41	45.8	3,180
Center of bridge	33	33	07.1	80	42	17.2	4,590
Cameron, Prim. Trav. Sta. No. 74 (previously described)	33	33	33.51	80	42	39.86	3,293

From Elloree southwest along public road to post 73.

Elloree, crossing of Main Street and Moncks Corner road and Columbia road (previously described)	33	31	50.0	80	34	19.6	.....
Road fork	33	31	03.7	80	34	40.1	4,995
T road southeast	33	30	36.0	80	35	21.2	4,468
Road fork	33	30	03.1	80	36	02.0	4,798

Southeast along highways on east border of quadrangle. (By Oscar Jones in 1918.)

Crossroads	33	44	53.6	80	31	45.5	.....
Road forks northwest, 200 feet south of church	33	44	22.9	80	31	46.1	3,107
Creek crossing	33	44	02.0	80	31	32.6	2,395
Pinewood, 3 miles west of, in southeast corner of Fulton crossroads, 20 feet from intersection; iron post stamped "Prim. Trav. Sta. No. 55"	33	43	37.1	80	30	41.0	5,036

ELLOREE QUADRANGLE—Continued.

From Cameron northwest along State road to Columbia. (By Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Cameron, Prim. Trav. Sta. No. 74 (previously described)	33	33	33.51	80	42	39.86	.....
Road fork	33	34	14.3	80	43	14.1	5,038
Crossroads	33	34	46.1	80	43	41.1	3,940
Center of bridge	33	35	21.2	80	44	07.0	4,169
Crossroads at store	33	36	09.8	80	44	37.2	5,558

From northwest corner of quadrangle east along public road to Fort Motte.

Center of road, opposite three mail boxes at road fork	33	44	17.2	80	44	39.6	.....
Road fork	33	44	27.1	80	44	06.2	2,990
Road fork northwest	33	44	40.0	80	43	14.0	4,598
T road south, opposite house on north side of road	33	44	32.7	80	42	42.3	2,769
Road fork	33	44	26.5	80	41	55.4	4,009
Fort Motte, 500 feet south of station of Southern Ry., at public-road crossing, on north side of road, 20 feet east of track, 4 feet west of crossing sign; iron post stamped "Prim. Trav. Sta. No. 84, 1919 J"	33	44	16.89	80	41	32.68	2,153

From Lonestar northwest along public road to Fort Motte.

Lonestar, Prim. Trav. Sta. No. 64 (previously described)	33	37	23.55	80	35	36.81	.....
Road fork to Creston	33	37	58.0	80	35	58.0	3,916
Center of concrete culvert	33	38	51.7	80	36	01.2	5,434
Road fork	33	39	37.8	80	36	15.1	4,803
Center of bridge	33	39	59.7	80	36	45.8	3,408
Road fork	33	40	21.8	80	36	53.6	2,324
Road fork, 80 feet west of store	33	40	37.5	80	37	50.5	5,055
Center of bridge	33	41	25.8	80	38	45.5	6,738
Crossroads	33	42	00.4	80	39	23.9	4,769
Crossroads at store	33	42	32.8	80	39	59.8	4,459
Crossroads at church and graveyard	33	42	50.4	80	40	16.8	2,279
Road fork	33	43	27.3	80	40	44.1	4,387
Fort Motte Prim. Trav. Sta. No. 84, 1919 J (previously described	33	44	16.89	80	41	32.68	6,473

From west border of quadrangle along Southern Ry. to Fort Motte.

Road crossing	33	41	05.4	80	44	20.3	.....
Road crossing at Singleton	33	41	15.6	80	43	49.2	2,820
Road crossing	33	41	45.3	80	42	52.3	5,665
Road crossing, overhead bridge	33	42	39.9	80	42	33.3	5,746
Creek crossing, stone culvert	33	43	30.5	80	42	04.6	5,657
Fort Motte, "Prim. Trav. Sta. No. 84, 1919 J" (previously described)	33	44	16.89	80	41	32.68	5,406

From Fort Motte along Southern Ry. to Columbia.

Fort Motte, Prim. Trav. Sta. No. 84 (previously described)	33	44	16.89	80	41	32.68	.....
Road crossing	33	44	42.8	80	40	47.3	4,647

Magnetic declination for center of quadrangle, 07′ W.; for northwest part, 16′ W.; for southwest part, 19′ W.

EUTAWVILLE QUADRANGLE.

From post 68, McNair 1917, west along public road to post 65, McNair 1917, thence northwest to Holly Hill, thence west along State road to Bowman quadrangle. (By Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossroads at store, 25 feet west of; nail in stump, T. B. M. Elev. 91.5 feet	33	16	38.1	80	15	31.5	.....
Center of bridge	33	16	24.1	80	16	14.7	3,930
Creek crossing	33	16	16.9	80	16	45.5	2,715
Center of bridge	33	15	49.7	80	17	22.9	4,200
Center of bridge	33	15	25.1	80	18	36.2	6,698
Junction of Monks Corner road with State road, on south side of road, in line with Monks Corner road. U. S. P. B. M. post. Elev. 80	33	15	14.59	80	19	15.84	3,532
Road fork	33	16	20.6	80	20	46.7	10,199
Black Creek, east end of bridge over; creek is line between Orangeburg and Berkeley counties	33	16	32.0	80	21	02.0	1,735
T road south	33	17	11.2	80	21	37.2	4,963
Briner Branch, center of bridge over	33	17	29.8	80	22	04.7	3,000
T road north through gate	33	18	16.8	80	23	06.8	7,088
Road fork	33	18	44.8	80	23	53.9	4,909
Road fork	33	19	09.2	80	24	29.4	3,890
Holly Hill, center of track, spike in tie	33	19	18.4	80	24	43.4	1,509
Center of bridge	33	19	33.0	80	25	04.7	2,329
T road north, Camden road	33	19	48.1	80	25	26.5	2,400
Road fork to St. George	33	20	16.7	80	26	08.2	4,569
T road south	33	20	46.1	80	26	51.5	4,720
Target Swamp, center of bridge over	33	20	56.9	80	27	07.3	1,730
T road north at house	33	21	29.8	80	27	55.6	5,279
Center of road, opposite gin	33	22	01.2	80	28	30.1	4,320
Carson School, 55 feet northwest of schoolhouse, in line with road north; iron post stamped "Prim. Trav. Sta. No. 72 J, 1919"	33	22	23.75	80	28	55.34	3,125
Horse Range Branch, east end of bridge over	33	22	37.6	80	29	28.9	3,169

From Eutaw Springs east along Monks Corner road to Pinopolis.

Eutaw Springs, center of granite monument marking the battle field of Eutaw Springs, 1781	33	24	25.92	80	17	54.70	.....
Crossroads at school house	33	23	51.0	80	16	53.9	6,251
Crossroads	33	23	35.2	80	16	21.7	3,158
Crossroads	33	23	21.8	80	15	40.9	3,718

From station 6290 south along county-line road to post 68, McNair 1917.

Road fork	33	19	20.7	80	15	03.7	.....
Crossroads	33	18	43.2	80	15	07.4	3,806
Road fork at bridge	33	18	12.8	80	15	10.8	3,099
Creek crossing	33	17	30.8	80	15	22.8	4,373
Road fork at Black Creek Church	33	17	07.4	80	15	26.5	2,389
Crossroads at store, 25 feet west of, nail in stump, T.B.M. Elev. 91.5 (previously described)	33	16	38.1	80	15	31.5	2,994

From post 66 south along Atlantic Coast Line R. R. to Harleyville.

Eutawville, 1 mile north of, at southeast corner of crossroads, 40 feet east of granite post 12 by 12 inches (land corner); iron post stamped "Prim. Trav. Sta. No. 66 J, 1919"	33	24	52.46	80	21	22.59	.....
Road fork	33	24	25.8	80	21	13.1	2,829
Eutawville, center of track of Atlantic Coast Line R. R., opposite semaphore of station	33	23	36.7	80	20	53.1	5,254
Road crossing	33	23	11.3	80	21	05.3	2,773
Road crossing	33	22	38.6	80	21	36.0	4,220
Road crossing	33	22	11.7	80	22	01.2	3,460
Connors station, road crossing at	33	21	08.0	80	23	00.7	8,190
Road crossing	33	20	24.9	80	23	41.0	5,539
Road crossing	33	20	03.2	80	24	01.3	2,800
Holly Hill, 300 feet north of depot, 10 feet west of track, on north side of public-road crossing, 300 feet south of Standard Oil Co.'s tank, 10 feet south of switch stand; iron post stamped "Prim. Trav. Sta. No. 71 J, 1919"	33	19	22.38	80	24	39.68	5,263
Holly Hill, center of track, spike in tie (previously described)	33	19	18.4	80	24	43.4	517
Bowger, road crossing at	33	18	21.9	80	25	11.6	6,193
Road crossing	33	17	28.6	80	25	36.9	5,790
Road crossing	33	16	46.3	80	25	57.0	4,601
Center of track, opposite water tank	33	16	13.1	80	26	12.9	3,620
South end of trestle	33	15	33.9	80	26	24.5	4,080
North end of trestle	33	15	12.4	80	26	30.9	2,230

EUTAWVILLE QUADRANGLE—Continued.

From station 6796 south to post 7, McNair 1918.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork to St. George (previously described)	33	20	16.7	80	26	08.2	.....
Target church crossroads	33	20	14.2	80	27	01.1	4,495
Crossroads	33	19	37.9	80	27	27.6	4,296
Road forks	33	19	04.0	80	28	03.8	4,605
Road forks	33	18	34.2	80	28	38.4	4,204
Four Hole Swamp, center of bridge over the east swamp	33	18	21.6	80	28	52.0	1,707

Mean magnetic declination, 0° 48′ W.

From post 64 east to St. Stephen along public road near north border of quadrangle. (By Oscar Jones in 1919.)

Center of bridge	33	29	24.0	80	29	05.7	.....
Road fork to gin	33	29	03.4	80	28	08.5	5,268
Road fork at store	33	28	51.4	80	27	46.1	2,250
Road fork	33	28	17.8	80	27	10.3	4,559
Road fork	33	27	56.9	80	26	56.8	2,401
Center of bridge	33	27	26.7	80	26	33.0	3,655
Road fork to Vance, 1 mile	33	26	58.3	80	25	49.6	4,668
Cross roads	33	26	32.1	80	25	19.6	3,660
T road south	33	26	05.2	80	24	52.8	3,549
Cross roads	33	25	48.1	80	24	12.0	3,861
T road north	33	25	37.2	80	23	23.8	4,230
Cross roads	33	25	33.8	80	23	09.3	1,280
Cross roads	33	25	24.8	80	22	32.7	3,236
Eutawville, 1 mile north of P. T. Sta. No. 66 J, 1919 (previously described)	33	24	52.46	80	21	22.59	6,779
Center of bridge	33	24	40.7	80	20	44.6	3,433
Cross roads	33	24	33.8	80	19	57.1	4,089
Road fork	33	24	28.1	80	19	17.1	3,437
Road fork	33	24	25.7	80	18	24.3	4,481
Eutaw Springs, center of granite monument (previously described)	33	24	25.92	80	17	54.70	2,515
Cross roads	33	24	42.2	80	16	55.8	5,263
Road fork	33	24	56.5	80	16	05.8	4,471
Cross roads	33	25	02.2	80	15	45.1	1,850
Road fork	33	24	54.6	80	15	05.6	3,437

Mean magnetic declination across north part of quadrangle, 1° 12′ W.

From post 72 north along public road near northwest corner of quadrangle to Parler.

Post 72 (previously described)	33	22	23.75	80	28	55.34	.....
Center of bridge	33	22	59.2	80	28	52.8	3,599
Center of bridge	33	23	13.5	80	29	00.3	1,584
Cross roads	33	23	51.7	80	29	22.3	4,292
T road south, 500 feet west of Oak Grove School	33	24	26.0	80	29	49.5	4,172

Mean magnetic declination along west border of quadrangle, 0° 45′ W.

East along public road at north border of quadrangle, Rimini-Greelyville line.

T road north on old railroad grade	33	29	41.8	80	23	38.8	.....
Road fork, 500 feet east of church, 40 feet west of mail box	33	29	36.4	80	22	50.3	4,149
Road fork	33	29	18.3	80	22	12.7	3,668
Center of bridge	33	29	03.2	80	21	33.8	3,631
Road fork	33	28	57.4	80	20	48.8	3,859
Schoolhouse, road crossing at, 10 feet north of two mail boxes	33	28	53.4	80	20	16.8	2,743
Center of creek	33	29	27.8	80	19	48.0	4,248
Road fork	33	29	54.2	80	19	25.8	3,270

Mean magnetic declination, 53′ W.

FORT MOTTE QUADRANGLE.

South along highways on north and east borders of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks, at schoolhouse	33	59	38.3	80	30	30.7	.....
Road forks, at summit of hill	33	59	41.0	80	30	55.3	2,095
Center of bridge	33	59	49.3	80	31	29.4	2,989
Creek crossing	33	59	38.7	80	32	24.1	.....
T road east	33	59	02.9	80	32	23.6	3,620
T road west	33	58	39.2	80	32	23.3	2,390
Road forks	33	58	18.5	80	32	22.9	2,090
T road west	33	57	30.0	80	32	06.0	5,108
Road forks, in front of store	33	56	42.2	80	31	24.2	5,973
Road forks southeast, at R. A. Hair's store	33	56	30.6	80	31	09.6	1,708
Crossroads, at three mail boxes	33	55	34.8	80	31	06.2	5,646
Road forks northwest	33	54	53.7	80	31	22.1	4,358
Center of road, opposite white church	33	54	18.5	80	31	17.9	3,581
Wedgefield, 50 feet west of depot, 25 feet north of track; iron post stamped "Prim. Trav. Sta. No. 54. Elev. 251"	33	53	34.5	80	31	01.3	4,663
T road east	33	53	00.3	80	31	02.2	3,451
T road east	33	52	29.1	80	31	02.3	3,160
Creek crossing	33	51	54.5	80	30	57.8	3,510
Road forks, northwest of new schoolhouse	33	50	59.4	80	31	12.4	5,692
Road forks	33	50	14.5	80	31	00.4	4,660
Crossing on Southern Ry	33	49	41.7	80	31	12.6	3,472
Crossroads	33	49	01.6	80	31	26.8	4,228
Crossroads	33	48	27.7	80	31	37.0	3,530
Center of bridge	33	48	01.0	80	31	59.5	3,302
Center of road, opposite school	33	47	47.2	80	32	05.5	1,487
T road east, at schoolhouse	33	47	02.2	80	32	34.4	5,157
Creek crossing	33	46	28.2	80	32	29.1	3,468
T road east	33	46	04.6	80	32	14.6	2,679
Road forks southeast	33	45	18.3	80	32	17.1	4,687
Center of creek crossing	33	45	04.6	80	32	13.0	1,424

On Atlantic Coast Line R. R. east of Wedgefield.

Road crossing	33	53	36.9	80	30	37.4	.....

Magnetic declination for east edge of quadrangle, 00° 33′ W.

From Sumter west along Atlantic Coast Line R. R. to Columbia. (By Oscar Jones in 1918.)

Wedgefield, Prim. Trav. Sta. No. 54 (previously described)	33	53	34.46	80	31	01.29	.....
Center of trestle	33	53	30.8	80	31	31.2	2,550
Center of track, opposite signboard reading, "Railroad crossing 1 mile"	33	53	23.3	80	32	14.8	3,745
Camden Junction, 40 feet southwest of crossing of Atlantic Coast Line and Southern railroads, 10 feet west of depot, 20 feet south of Atlantic Coast Line track; iron post stamped "Elev. 133"	33	53	04.8	80	33	15.0	5,408
East end of trestle	33	52	49.3	80	34	16.6	5,420
Malta, 100 feet east of depot, south side of track; iron post stamped "105"	33	52	34.1	80	33	15.9	5,232
East end of track	33	52	22.6	80	36	01.1	3,978
East end of trestle	33	52	10.3	80	36	49.6	4,270
Wateree River, west end of steel bridge over	33	51	59.6	80	37	31.5	3,698
Road crossing	33	51	43.7	80	38	24.8	4,770
Acton, 40 feet east of depot, 25 feet north of track; iron post stamped "Elev. 177"	33	51	55.6	80	39	12.9	4,219
Road crossing	33	52	07.8	80	39	55.3	3,781
Road crossing	33	52	22.5	80	40	45.2	4,460
Eastover, 50 feet west of depot, 28 feet north of track; iron post stamped "Prim. Trav. Sta. No. 57, 1918 J. Elev. 190"	33	52	37.93	80	41	36.80	4,621
Road crossing	33	53	15.8	80	43	46.1	11,550
Road crossing	33	53	20.9	80	44	03.4	1,540
East side of public road, south of track; iron post stamped "Elev. 198"	33	53	33.8	80	44	48.4	4,010

Magnetic declination, 0° 00′.

FORT MOTTE QUADRANGLE—Continued.

From Fort Motte along Southern Ry. to Columbia. (By Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	33	45	04.9	80	40	03.9	.....
Road crossing	33	45	30.2	80	39	45.9	2,975
Road crossing	33	45	48.7	80	39	43.6	1,878
South end of steel drawbridge over Congaree River	33	46	07.5	80	39	54.8	2,127
North end of trestle	33	46	54.8	80	40	41.1	6,170
Kingville, center of track, opposite semaphore of station	33	48	16.6	80	42	01.0	10,674
Road crossing	33	48	56.6	80	42	49.3	5,733
Road crossing	33	49	28.9	80	43	47.4	5,890
Road crossing	33	49	58.6	80	44	40.7	5,400

From Kingville east along Southern Ry. to Acton, thence north along public road to post 72.

Kingville, center of track, opposite semaphore of station (previously described)	33	48	16.6	80	42	01.0	.....
Kingville, 200 feet east, on line of north face of station, at northwest corner of store; iron post stamped "Prim. Trav. Sta. No. 88, 1919 J"	33	48	17.77	80	41	58.88	213
Road crossing	33	48	19.4	80	41	34.0	2,109
Road crossing	33	48	27.4	80	40	48.9	3,888
Road at McIver	33	48	24.7	80	39	35.5	6,200
Road crossing	33	48	23.7	80	39	07.2	2,390
Wateree, 90 feet east of station, 27 feet east of mail stand, center of track at road crossing; nail in tie	33	48	21.7	80	38	12.0	4,662
Road fork, at small bridge	33	48	58.6	80	38	26.6	3,919
T road west	33	49	32.7	80	38	31.3	3,472
Road fork	33	50	10.6	80	38	47.2	4,058
Crossroads	33	50	39.1	80	38	55.0	2,950
Center of bridge	33	51	06.0	80	39	03.0	2,808
Road fork	33	51	24.8	80	39	12.0	2,040
Acton; iron post stamped "Elev. 177" (previously described)	33	51	55.55	80	39	12.86	3,103
Crossroads	33	52	38.2	80	39	26.3	4,466
Road fork	33	53	00.1	80	39	34.5	2,320
Road fork	33	53	27.8	80	39	44.5	2,917
Crossroads	33	54	08.9	80	40	13.8	4,838
Crossroads at store	33	54	18.6	80	40	22.9	1,244
Culvert pipe	33	54	55.9	80	39	56.4	4,392
Road fork	33	55	47.6	80	39	23.9	5,909
Creek crossing	33	56	09.8	80	39	12.1	2,455
Crossroads, on Garner's Ferry road, 1.5 miles west of ferry, northwest corner, 6 feet north of two mail boxes; iron post stamped "Prim. Trav. Sta. No. 89, 1919 J"	33	56	35.63	80	39	19.35	2,689
Road fork at mail box	33	56	32.9	80	40	30.8	6,021
Crossroads at church	33	56	34.3	80	41	19.9	4,130
T road south, 500 feet east of Good Hope Church	33	56	21.4	80	42	33.4	6,327
Road fork	33	56	35.0	80	43	06.6	3,116
Road fork	33	57	10.3	80	43	33.7	4,238
Road fork	33	57	47.0	80	43	46.9	3,875
Crossroads	33	58	21.2	80	44	25.6	4,754
Road fork, opposite milepost reading "Columbia 20 miles"	33	58	44.8	80	44	50.8	3,193
Crossroads, top of hill, at schoolhouse	33	59	06.1	80	44	36.5	2,471
Prim. Trav. Sta. No. 72, 1918 H (previously described)	33	59	56.80	80	44	32.73	5,138

Magnetic declination for quadrangle, 0° 25′ W.

GEORGETOWN QUADRANGLE.

From Totten northeast along highways. (Part of checked spur line.) (By Oscar Jones in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Totten, on first salient angle of Frasers Point; iron cone under stone post (U. S. C. & G. S. station)	33	18	46.11	79	16	29.37	.....
Road fork to Barnes Ridge	33	18	41.5	79	15	45.1	3,793
Creek crossing	33	19	48.6	79	15	12.6	2,837

GEORGETOWN QUADRANGLE—Continued.

From Georgetown to Andrews along Georgetown & Western R. R.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Georgetown, northeast corner of South Front and South Frazee streets; water hydrant	33	22	16.4	79	17	25.6	.....
Crossroads	33	22	52.2	79	18	42.2	7,441
Creek crossing	33	23	02.0	79	19	09.2	2,490
Road crossing	33	23	10.5	79	19	32.5	2,160
Road crossing	33	23	28.2	79	20	21.2	4,500
Road crossing	33	23	41.4	79	20	57.6	3,360
Point of switch	33	23	53.2	79	21	30.4	3,030
Creek crossing	33	24	08.6	79	22	24.6	4,853
Creek crossing	33	24	22.0	79	23	18.9	4,800
Road crossing	33	24	30.5	79	23	53.2	3,030
Road crossing	33	24	41.0	79	24	35.6	3,779
Sampit station, road crossing, 210 feet east of	33	25	14.3	79	26	51.6	11,985
Road crossing	33	25	20.9	79	27	19.0	2,415
Olin station, point of switch near	33	25	29.6	79	27	54.4	3,120
Road crossing at store	33	25	44.6	79	28	56.3	5,460
Road crossing	33	25	53.8	79	29	34.4	3,360
Northeast along public roads.							
Georgetown, northeast corner of South Front and South Frazee streets; water hydrant	33	22	16.4	79	17	25.6	.....
Crossroads	33	22	34.8	79	17	39.7	2,220
Road fork	33	23	21.6	79	17	20.3	5,005
Road fork, center of stone monument to Marion's men	33	24	59.6	79	17	02.9	10,015
Road fork	33	26	39.5	79	16	09.0	11,082
Pringle's Ferry, south bank of Black River at	33	27	01.2	79	15	50.5	2,694
Road fork, in front of store	33	27	11.4	79	15	04.1	4,058
West along highways near north border of quadrangle.							
Road fork	33	28	42.0	79	15	51.8	.....
Road fork	33	29	05.2	79	16	18.9	3,278
Skinner's Ferry, east bank of Black River at	33	28	54.6	79	16	29.4	1,383
Road fork	33	28	16.8	79	16	52.5	4,299
Well	33	28	43.3	79	17	31.6	4,261
Center of creek	33	28	16.6	79	18	36.0	6,089
Road fork	33	27	58.3	79	19	18.0	4,010
Road fork	33	28	33.5	79	20	02.3	5,169
Crossroad	33	29	07.2	79	20	43.9	4,900
Crossroad, church	33	29	16.9	79	20	55.9	1,410
Road fork	33	29	58.7	79	21	47.7	6,090
South along highways in west part of quadrangle.							
Road fork	33	29	43.2	79	24	54.6	.....
Road fork	33	29	19.9	79	25	14.6	2,897
Road fork	33	28	49.8	79	25	38.4	3,653
Iron pipe at crossroads	33	27	48.7	79	26	23.7	7,266
Road fork	33	26	46.2	79	26	18.2	6,335
Road fork	33	26	29.2	79	26	27.2	1,876
Railroad crossing, 210 feet east of Sampit station	33	25	14.3	79	26	51.6	7,849
Crossing at tramway	33	23	55.6	79	27	20.7	8,323
Road fork, in front of house	33	23	07.1	79	27	36.5	5,080
Road fork	33	22	38.9	79	27	16.9	3,306
Road fork	33	22	22.1	79	26	47.2	3,034
Road fork	33	21	07.1	79	27	03.8	2,070
Road fork	33	21	45.2	79	27	40.3	3,808
Junction with line from west	33	21	44.9	79	27	40.8	50
Road fork, near church	33	20	58.9	79	28	14.8	5,465
Northwest corner stone, at road fork	33	20	00.0	79	28	28.6	6,078
Road fork	33	19	25.1	79	28	47.5	3,873
Center of road, front of house	33	18	09.9	79	29	05.5	7,752
Methodist Church, road fork; iron post stamped "Prim. Trav. Sta. No. 6"	33	17	47.6	79	29	08.6	2,270
Center of bridge over creek	33	17	40.7	79	28	44.9	2,121
Road fork, at mail box	33	17	55.1	79	27	52.1	4,717
Center of road, opposite house	33	17	09.0	79	26	55.7	6,683
Center of road, opposite house	33	16	50.2	79	26	37.6	2,441
Center of road, opposite gate	33	16	22.6	79	25	55.9	4,509
Center of road, opposite house	33	16	09.1	79	25	44.8	1,651

GEORGETOWN QUADRANGLE—Continued.

Near center of west border of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Station 1200=625	33	21	44.9	79	27	40.8	
Smith's store, road forks	33	21	33.4	79	28	39.0	5,071
Northeast through south part of quadrangle.							
Road fork	33	15	49.8	79	21	48.8	
Sharp bend in road, tin sign on pine tree, east of road	33	16	29.5	79	21	09.2	5,235
Road fork	33	17	33.2	79	20	49.4	6,655
Center of road, opposite dipping vat	33	18	17.6	79	20	13.7	5,407
Road forks	33	18	53.2	79	19	39.1	4,643
Road forks	33	19	24.0	79	19	10.2	3,960
Station 317, stake, junction with line south	33	20	30.9	79	17	49.0	9,650
Three corners, road fork	33	20	31.8	79	17	48.6	100
Reeds Ferry, Sampit River, south end of wire cable, 5 feet north by 5 feet west is cypress tree, to which cable is anchored	33	21	24.2	79	17	40.8	5,335
Georgetown, northeast corner of South Frazee and South Front streets, water hydrant	33	22	16.4	79	17	25.6	5,428
Georgetown, Episcopal Church (U. S. C. & G. S. station)	33	22	07.2	79	16	51.8	3,009
North along highways in east part of quadrangle.							
Crossroads	33	15	09.6	79	16	51.0	
Road fork	33	15	20.1	79	17	21.9	2,832
Creek crossing	33	15	52.8	79	17	37.6	3,560
Road fork, at church	33	16	12.3	79	17	44.8	2,070
Road fork	33	16	35.1	79	18	14.4	3,409
Road fork	33	17	53.5	79	18	13.9	7,925
Road fork	33	18	24.5	79	18	14.4	3,133
Road fork	33	19	17.8	79	17	57.6	5,572
Junction with line from Mount Pleasant to Georgetown	33	20	30.9	79	17	49.0	7,418

Magnetic declination for northwest corner of quadrangle, 1.4° W.; for west border, 1.5° W.; for north line through center, 1.8° W.

GREEN POND QUADRANGLE.

Along Seaboard Air Line Ry. northeast. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Lobeco station, 500 feet west of, 60 feet east of Seabrook-Yemassee road, 25 feet south of center of railroad track, on bank about 5 feet above track; iron post stamped "Prim. Trav. Sta. No. 33, 1917 Mac." Azimuth of long railroad tangent, 248° 02′	32	33	08.2	80	44	37.6	
Public-road crossing	32	33	32.5	80	43	27.4	6,499
Second-class road crossing	32	33	41.7	80	43	00.2	2,505
Public-road crossing, 500 feet west of Briars station	32	34	10.0	80	41	37.5	7,635
Farm-road crossing	32	34	21.9	80	41	02.5	3,224
Wimbee Creek, center of swing span over	32	34	41.1	80	40	06.0	5,210
Combahee River, center of swing span over	32	35	28.5	80	37	47.0	12,825
Crossing of creek, straight cut channel	32	35	49.4	80	36	45.5	5,665
Road crossing, second class	32	36	24.1	80	35	03.5	9,405
Wiggins, intersection of Seaboard Air Line and Savannah Lumber Co.'s railroads	32	36	53.1	80	33	38.4	7,844
Northwest along highways.							
Crossing of public road and Savannah Lumber Co.'s railroad	32	37	22.3	80	34	23.6	
Angle of 28° between two sections of road	32	37	28.0	80	35	09.1	3,930
Forks of T road	32	37	36.4	80	35	22.5	1,430
T road west	32	37	54.9	80	35	25.3	1,884
Crossing of Savannah Lumber Co.'s railroad	32	38	04.3	80	35	29.5	1,022
Crossing of Savannah Lumber Co.'s railroad	32	38	30.4	80	35	49.4	3,134

GREEN POND QUADRANGLE—Continued.

Northwest along highways—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Forks of road, at separation of wagon tracks	32	38	44.4	80	36	50.0	5,368
Forks of road, at separation of wagon tracks	32	39	07.9	80	37	12.2	3,042
Angle of 28° between two sections of road	32	39	34.9	80	37	24.4	2,921
Road forks	32	39	57.5	80	37	48.4	3,143
T road corners, Combahee Ferry and Green Pond road runs northeast and southwest	32	41	11.2	80	37	56.2	7,377
Private T road along northwest fence line	32	40	17.3	80	38	47.9	7,010
Road forks, edge of Combahee marsh	32	39	37.9	80	39	36.0	5,723
Bridge over old rice canal	32	39	18.9	80	40	29.6	4,970
Combahee Ferry, about 900 feet west and a little north of; iron post stamped "Prim. Trav. Sta. No. 35, 1917 Mac."	32	39	07.0	80	41	09.8	3,644
Second-class crossroads	32	39	35.0	80	42	38.2	8,066
T road southwest	32	39	36.8	80	42	49.0	940
Second-class crossroads	32	39	40.8	80	44	31.7	8,791
Road fork	32	39	42.4	80	44	57.5	2,214

Along Atlantic Coast Line R. R. northeast near north border of quadrangle. (By E. L. McNair in 1917.)

Road crossing	32	42	50.9	80	44	57.3	.....
Milepost 61	32	42	56.5	80	44	14.5	3,700
Harris & Cunnin's sawmill, 35 feet south and 30 feet west of road crossing at; iron post stamped "Prim. Trav. Sta. No. 5, 1917 Mac." Azimuth of long railroad tangent, 261° 15′	32	43	05.0	80	43	07.6	5,781
Milepost Sav. 63	32	43	12.4	80	42	12.3	4,785
Whitehall, road crossing at	32	43	18.0	80	41	29.1	3,735
Milepost Sav. 65	32	43	28.3	80	40	10.1	6,825
Second-class road crossing	32	43	33.8	80	39	27.6	3,675
Milepost Sav. 67	32	43	44.2	80	38	07.9	6,885
Green Pond siding, west end of switch stand	32	43	49.0	80	37	31.0	3,190
Green Pond station, about 600 feet west of, directly opposite water tank, 80 feet north of center of main track, in line with telegraph poles; iron post stamped "Prim. Trav. Sta. No. 6, 1917 Mac." Azimuth to semaphore post at station, 268° 19′; of tangent east, 261° 16′ 15″	32	43	53.7	80	37	00.6	2,633
Green Pond siding, road crossing	32	43	53.9	80	36	52.7	674
Farm-road crossing	32	44	04.8	80	35	29.1	7,230
Road crossing	32	44	12.3	80	34	30.8	5,035
Road crossing	32	44	15.2	80	34	09.1	1,873
Center of bridge over Ashepoo River	32	44	30.3	80	33	08.1	5,429
Ashepoo station, opposite east end of, 25 feet south of center of track, on bank; iron post stamped "Prim. Trav. Sta. No. 8, 1917 Mac." Azimuth of long tangent east, 252° 50′; to semaphore post 2,670 feet east, 252° 02′ 45″	32	44	31.4	80	33	03.0	455
Ashepoo siding switch stand	32	44	41.4	80	32	25.6	3,349

Along Seaboard Air Line Ry. and highways in northeast part of quadrangle. (By E. L. McNair in 1917.)

Railroad intersection, Seaboard Air Line and Savannah Lumber Co.'s railroads	32	36	53.1	80	33	38.5	.....
Wiggins, 1,033 feet east of intersection of Seaboard Air Line and Savannah Lumber Co.'s railroads, 80 feet east of public-road crossing, 25 feet south of track center; iron post stamped "Prim. Trav. Sta. No. 34, 1917 Mac." Azimuth of railroad tangent, 248° 06′ 30″	32	36	56.6	80	33	27.2	1,033
Chehaw River, center of girder bridge over	32	37	11.6	80	32	43.7	4,019
Crossing of stream about 120 feet wide, center	32	37	29.0	80	31	52.7	4,710
Road forks	32	38	43.4	80	30	01.5	.....
Road forks	32	39	17.1	80	30	38.8	4,670
Crossing of stream close to gateway	32	39	43.6	80	31	19.5	4,393
Bridge over old rice canal	32	39	57.0	80	31	57.5	3,515
Angle of 58° in road, intersection of center lines	32	40	07.1	80	32	28.0	2,800
Crossing of Savannah Lumber Co.'s railroad	32	40	22.1	80	32	31.3	1,540
Private T road east through gate	32	41	48.2	80	33	24.7	9,825
Private T road east through gate	32	42	11.1	80	33	46.0	2,948
Second-class T road northwest	32	42	48.1	80	34	20.2	4,740
Crossroads	32	44	09.8	80	34	28.2	8,290
Green Pond station, about 2.4 miles east of, on Atlantic Coast Line R. R., at road crossing; south rail	32	44	12.3	80	34	30.8	342

Magnetic declination in northeast part of quadrangle, 0.2° E.

GREEN POND QUADRANGLE—Continued.

Near Green Pond. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Green Pond, Primary Traverse Station No. 6	32 43 53.7	80 37 00.6	.....
Public-road crossing	32 44 27.5	80 37 02.2	3,420

Magnetic declination for north border of quadrangle, 0° 15′ W. to 0° 18′ E.; along Seaboard Air Line Ry. in south half, 0° 43′ W. to 0° 38′ E.; along highways in center of northeast quarter, 0° 27′ E. to 0° 34′ W.; along highways near south border of north half, 0° 14′ E.

GREENS CUT QUADRANGLE.

Southeast along Southern Ry. in extreme northeast corner of quadrangle. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	33 14 36.2	81 45 21.8	.....
Upper Three Runs Creek, pile bridge over	33 14 13.8	81 45 02.1	2,820

Near northeast corner of quadrangle. (By B. H. Yoakum in 1918.)

Road forks	33 12 10.3	81 45 02.6	.....
Flowery Gap Landing, U. S. Corps of Engineers b. m. No. 19	33 11 47.5	81 45 24.1	2,942

GUIDE QUADRANGLE.

Along highways near southwest corner of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Forks of road	34 00 45.5	78 44 10.2	.....
Forks of road	34 00 44.7	78 44 35.0	2,092
Graham store, 2 feet south of fence, in northeast corner of cross-roads; iron post stamped "Prim. Trav. Sta. No. 30 J, 1918"	34 00 56.3	78 44 49.9	1,719

Magnetic declination near southwest corner of quadrangle, 2° 15′ W.

HAGOOD QUADRANGLE.

(By Oscar Jones in 1918.)

For other positions in Hagood quadrangle, see Camp Jackson.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Statesburg, 3.5 miles north of, on west side of Statesburg-Camden road, in line with T road east, 1,270 feet north of road forks; iron post stamped "Prim, Trav. Sta. No. 53 J, 1918"	34 00 23.2	80 32 24.9	.....

Magnetic declination for southeast corner of quadrangle, 00° 47′ W.

HARDEEVILLE QUADRANGLE.

Northwest along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Parysburg switch stand at south end of siding	32	15	09.0	81	07	00.2	6,570
Parysburg, road crossing at	32	15	33.0	81	06	26.9	3,750
Road crossing	32	16	42.3	81	05	19.0	9,115
Hardeeville station, about 800 feet south from, 30 feet north and 60 feet west from Main Street crossing, in open ground; iron post stamped "Prim. Trav. Sta. No. 1, 1917 Mac."	32	17	15.4	81	04	54.8	3,936
Road crossing	32	18	38.7	81	03	55.2	9,844
Milepost Sav. 26	32	19	26.1	81	03	32.3	5,190
Milepost Sav. 27	32	20	14.5	81	03	09.0	5,280
Milepost Sav. 28	32	21	03.0	81	02	45.6	5,290
Milepost Sav. 29	32	21	51.4	81	02	22.2	5,290
Terbee siding, switch stand at south end of	32	22	47.0	81	01	55.3	6,065
Terbee siding, switch stand at north end of	32	23	18.6	81	01	40.1	3,450
Road crossing	32	23	52.1	81	01	23.9	3,665
Milepost Sav. 32	32	24	16.7	81	01	12.0	2,685
Road crossing, milepost 33	32	25	04.7	81	00	48.8	5,235
Road crossing, at Switzerland post office	32	25	40.3	81	00	31.6	3,890
Okeetee Club house, road crossing	32	25	55.4	81	00	24.2	1,655
Okeetee siding, switch stand at north end of	32	26	35.8	81	00	04.7	4,405

Southeast along highways near north border of quadrangle. (By H. S. Senseney in 1918.)

Crossroads near abandoned cabin	32	29	55.3	81	11	54.6	.....
Road fork at blazed pine tree	32	29	25.8	81	11	04.8	5,198
Gate in center of road	32	29	17.6	81	10	43.2	2,028
Center of road, between two blazed pine trees	32	29	20.6	81	10	13.0	2,604
Tillman, 3.75 miles west of, 70 feet east of gate to N. Wallace's hunting lodge, at fence corner; iron post stamped "Prim. Trav. Sta. No. 3 S., 1918"	32	29	11.9	81	09	50.1	2,147
West end of bridge	32	29	01.5	81	09	27.8	2,177
Center of road, at large blazed pine tree	32	28	33.6	81	08	49.6	4,320
Small bridges, the more westerly of two, 715 feet east of road fork	32	28	12.3	81	08	05.3	4,361
Old road south	32	28	00.8	81	07	38.7	2,555
Road fork	32	27	49.6	81	06	54.7	3,934
Tillman, railroad crossing at Jandon's store	32	27	47.9	81	06	25.1	2,540
T road south	32	27	46.6	81	06	01.6	2,020
Lane north	32	27	45.5	81	05	42.2	1,660
Lane north	32	27	43.9	81	05	15.0	2,335
Road forks at A. Kennedy's mail box	32	27	39.7	81	03	59.9	6,449
Road north at church	32	27	39.0	81	03	37.7	1,904
Lane north of two mail boxes	32	27	44.7	81	02	42.4	4,770
Old road north at two mail boxes	32	27	49.4	81	01	58.5	3,795
T road north	32	27	51.0	81	01	42.2	1,410
Crossroads, road south through gate	32	27	57.3	81	00	42.6	5,140
Crossroads	32	27	59.6	81	00	19.5	1,990
Road fork	32	28	31.0	81	00	00.3	3,569

Magnetic declination for north border of quadrangle, 0.1° E.

Near southeast corner of quadrangle. (By H. S. Senseney in 1918.)

Lane through gate	32	15	26.4	81	02	00.4	.....
Second-class road north at blazed pine tree	32	15	39.1	81	02	56.0	4,949
Road forks	32	15	59.3	81	03	34.0	3,847
Lane to house	32	16	42.4	81	04	14.4	5,569
T road south	32	17	00.4	81	04	36.2	2,610
Prim. Trav. Sta. No. 1, 1917 Mac. (previously described)	32	17	15.41	81	04	54.80	2,200

Magnetic declination near southeast corner of quadrangle, 0° 14′ E.

HOPKINS QUADRANGLE.

For other positions in this quadrangle see Camp Jackson.

From Cameron northwest along State road to Columbia. (By Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Beaver Creek, center of bridge over	33	45	08.1	80	54	05.9	.....
Center of bridge	33	45	34.1	80	54	51.5	4,657
Center of road, opposite concrete culvert on east side of road, at milepost 12	33	46	20.0	80	55	28.8	5,605
Road fork, 50 feet south of milepost 13	33	47	03.6	80	55	59.2	5,104
Crossroads	33	47	23.6	80	56	42.2	4,151
Red Store, in southeast corner of road fork; iron post stamped "Prim. Trav. Sta. No. 82, 1919 J"	33	47	54.56	80	57	43.14	6,019
Road fork	33	48	33.1	80	58	33.1	5,744
Crossroads at church	33	48	50.3	80	58	46.7	2,080
Crossroads at G. Muller's mail box	33	49	58.0	80	59	40.0	8,188
Southwest corner of crossroads; iron post stamped "Elev. 228"	33	50	20.49	80	59	59.86	2,725
North along public road to the Red Store.							
Road fork at house	33	45	14.8	80	57	44.7	.....
Crossroads	33	45	39.8	80	57	55.3	2,681
Crossroads	33	46	32.7	80	58	05.8	5,419
Road fork	33	47	22.8	80	57	42.4	5,438
Red Store "Prim. Trav. Sta. No. 82, 1919 J" (previously described)	33	47	54.56	80	57	43.14	3,207
From east border of quadrangle northwest along Southern Ry. to Columbia.							
Road crossing	33	50	19.9	80	45	18.9	.....
Gadsden, 500 feet north of station, at road crossing, west side of track, south side of road, 5 feet north of crossing sign; iron post stamped "Prim. Trav. Sta. No. 85, 1919 J"	33	50	45.00	80	46	04.34	4,591
T road north	33	50	47.9	80	47	06.1	5,213
Road fork south at store	33	50	43.7	80	47	42.3	3,078
Road fork south	33	50	43.3	80	48	38.5	4,745
Center of bridge	33	50	42.7	80	48	55.2	1,405
Road fork north	33	50	38.7	80	49	40.5	3,834
Center of bridge	33	50	29.4	80	50	15.6	3,107
Center of road opposite granite milepost marked "Columbia 16 miles," near red gin	33	50	28.1	80	51	06.6	4,305
Center of bridge over creek	33	50	24.6	80	51	37.0	2,584
Center of road, opposite mail box at road fork south	33	51	03.1	80	52	25.3	5,631
Road fork	33	51	32.9	80	52	43.1	3,359
Tramroad crossing	33	52	11.9	80	53	37.8	6,073
Road fork	33	52	23.7	80	53	52.8	1,730
Road fork	33	52	55.6	80	54	36.5	4,897
Columbia, 10 miles southeast of, on Bluff Road, at church, on north side of road, 6 feet from southwest corner; iron post stamped "Prim. Trav. Sta. No. 86, 1919 J"	33	53	42.72	80	55	03.00	5,257
T road at schoolhouse	33	54	22.6	80	55	52.7	5,810
Center of bridge at mill	33	54	56.4	80	57	02.1	6,775
Center of concrete bridge	33	55	21.4	80	57	26.6	3,260
Concrete bridge	33	55	56.3	80	58	09.9	5,071
Columbia, 6 miles southeast of, on Bluff Road, at road fork to Simms, southwest corner, 1 foot east of milepost 6; iron post stamped "Prim. Trav. Sta. No. 87, 1919 J"	33	56	17.07	80	58	49.20	3,919
East end of steel bridge	33	56	48.4	80	59	18.4	4,013
Road fork	33	57	12.9	80	59	31.5	2,709
Center of concrete bridge	33	57	23.6	80	59	52.7	2,086
From Congaree north along public road.							
Congaree, "Prim. Trav. Sta. No. 59" (previously described)	33	54	29.76	80	47	56.20	.....
Center of road, opposite house, at angle in road	33	54	47.8	80	47	12.8	4,096
Crossroads	33	55	29.1	80	46	50.9	4,570
Road fork	33	55	54.2	80	46	37.8	2,780
Road fork at schoolhouse, opposite milepost, marked "Columbia 17 miles"	33	56	33.9	80	46	25.0	4,154
Crossroads	33	56	40.9	80	45	51.0	2,955
Road fork	33	57	18.7	80	45	30.7	4,190
Center of bridge	33	57	26.2	80	45	18.2	1,306
Center of bridge	33	58	00.5	80	45	00.6	3,779

Magnetic declination for quadrangle, 0° 20′ W.

HYMAN QUADRANGLE.

North along Atlantic Coast Line R. R. and east along highways near north border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Road crossing	33	53	19.2	79	44	56.1	
Road crossing	33	53	48.7	79	44	46.2	3,100
Scranton, road crossing	33	55	00.8	79	44	39.5	7,305
Center of track, at tool house	33	55	39.6	79	44	42.0	3,930
Road crossing	33	56	13.2	79	44	44.2	3,400
Milepost 84	33	56	40.1	79	44	45.9	2,720
Center of track, opposite switch stand	33	57	43.4	79	44	49.9	6,400
Coward station, 200 feet southeast of, 30 feet west of track, 50 feet north of crossing sign; iron post stamped "Prim. Trav. Sta. No. 4 J, 1918"	33	58	10.7	79	44	51.9	2,771
Road fork	33	58	04.2	79	44	15.8	3,109
Road fork	33	57	55.1	79	43	54.3	2,039
Crossroads	33	57	53.5	79	43	25.0	2,469
Center of bridge	33	57	51.0	79	43	00.4	2,087
Center of bridge	33	58	04.6	79	42	21.9	3,528
Crossroads	33	57	58.8	79	41	40.4	3,539
West end of trestle	33	58	24.2	79	41	03.7	4,022
East end of bridge over Lynch River	33	58	29.7	79	40	53.4	1,028
Crossroads at store	33	58	53.2	79	40	20.4	3,653
Road fork	33	58	34.5	79	40	00.7	2,519
Center of road, opposite house	33	58	56.2	79	38	36.3	7,440
Road fork to house	33	59	14.5	79	37	25.3	6,260
Road fork, at church	33	59	34.1	79	36	08.6	6,750
Hyman, T road west, near store	33	59	39.6	79	35	47.6	1,860
Center of bridge, east one of two	33	59	48.1	79	35	14.8	2,890
Road fork	33	59	48.4	79	34	47.5	2,300
Pamplico, about 1,000 feet south of depot, 50 feet west of Seaboard Air Line Ry., on south side of public road; iron post stamped "Prim. Trav. Sta. No. 6 J, 1918"	33	59	37.7	79	33	48.0	5,123
Center of road, old store on north, tobacco barn on south	33	59	26.5	79	32	54.7	4,637
Road fork	33	59	19.7	79	32	16.2	3,310
Forrest Hill School, fork of River Road and Pamplico Road	33	59	10.7	79	31	28.4	4,128
Center of concrete bridge	33	58	37.6	79	31	25.1	3,361
Crossroads	33	58	05.0	79	31	05.5	3,681
Crossroads, at store	33	57	48.4	79	30	50.6	2,099
Road fork	33	57	12.5	79	30	26.0	4,178
Center of bridge	33	56	43.0	79	30	06.8	3,394

Magnetic declination along north border of quadrangle, 1° 33′ W.

East along public road near south border of quadrangle. (By Oscar Jones in 1918.)

Road fork	33	46	39.1	79	44	52.4	
Road fork	33	46	30.1	79	44	21.4	2,770
Center of more westerly of two bridges	33	46	17.1	79	43	36.8	3,988
Crossroads	33	46	17.2	79	43	08.2	2,413
Crossroads, at 5-mile post	33	46	11.3	79	42	15.9	4,457
Road fork	33	46	04.2	79	41	44.7	2,729
Two-story white school, center of road opposite	33	45	41.8	79	40	21.8	7,357
Crossroad	33	45	26.3	79	39	52.0	2,960
White schoolhouse, center of road opposite	33	45	08.8	79	39	02.0	4,579

Along highways through center of quadrangle.

Road fork	33	52	47.9	79	44	51.0	
Road fork near church	33	52	36.4	79	43	24.8	7,356
Center of the most easterly of three bridges	33	52	26.1	79	42	28.2	4,887
T road south	33	51	51.0	79	41	24.4	6,440
Lees crossroads, intersection of roads	33	52	13.8	79	39	57.4	7,691
Road fork at old store	33	51	22.3	79	39	38.5	5,446
White Church, center of road opposite	33	51	38.1	79	38	35.1	5,575
Road fork	33	51	40.8	79	37	52.0	3,644
Smith bridge over Lynch River, 2 miles southwest of, in a triangular grass plot at road fork; iron post stamped "Prim. Trav. Sta. No. 38"	33	51	12.6	79	36	51.9	5,818
South end of bridge	33	52	02.1	79	36	09.1	6,168
Smith bridge over Lynch River, north end of bridge	33	52	13.8	79	35	46.2	2,262
Hannah post office, 100 feet west of store at road fork	33	52	56.7	79	34	53.4	6,215
Road fork	33	52	59.1	79	34	41.0	1,072
Center of bridge	33	53	00.1	79	33	57.9	3,636
T road south	33	53	21.9	79	32	52.1	5,968
Road fork	33	53	24.0	79	32	14.0	3,214
West end of bridge	33	53	22.5	79	31	44.2	2,767
Road fork	33	53	02.2	79	31	13.1	1,822
Salem, crossroad	33	53	12.8	79	30	45.6	2,550

HYMAN QUADRANGLE—Continued.

East along highways near north border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Trestle, center of	33	59	49.6	79	44	57.9	.....
Trestle, center of	33	59	22.7	79	44	56.2	2,730
Road crossing	33	58	49.8	79	44	54.1	3,331
Coward, "Prim. Trav. Sta. No. 4" (previously described)	33	58	10.7	79	44	51.9	3,955

Magnetic declination for south border of quadrangle, 1° 29′ W.; for center, 1° 23′ W.; for west border, 1° 28′ W.

INDIANTOWN QUADRANGLE.

East along Georgetown road to center of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of road, opposite 7-mile post	33	37	04.4	79	43	43.6	.....
Center of small bridge	33	36	59.9	79	43	25.8	1,570
Road fork	33	36	49.3	79	42	48.7	3,314
White Church, 100 feet southwest of, at northeast corner of cross-roads; iron post stamped "Prim. Trav. Sta. No. 5 J, 1918"	33	36	20.8	79	42	03.3	4,801
Center of road, opposite schoolhouse	33	35	52.5	79	41	18.5	4,7o0
Center of culvert	33	35	41.2	79	41	00.8	1,878
Road fork	33	35	25.4	79	40	47.6	1,9o9
Center of small bridge	33	35	19.9	79	40	27.5	1,787
Center of bridge	33	34	54.7	79	39	50.1	4,061
St. Mathews Church, road fork in front of	33	34	23.3	79	38	49.0	6,0o5
Center of small bridge	33	34	20.0	79	38	14.0	2,980
Center of bridge	33	34	12.0	79	37	33.1	3,5o0
Center of bridge	33	33	53.0	79	37	04.9	3,o64
Center of bridge	33	33	39.0	79	36	57.0	1,572
Center of road, opposite schoolhouse	33	33	16.0	79	36	35.0	2,974
Road fork	33	33	00.8	79	36	23.1	1,84o
Center of bridge, the east one of two	33	32	38.2	79	36	15.5	2,373
Bloomingdale post office, 600 feet east of, T road north	33	32	02.6	79	35	36.6	4,876
Road fork	33	31	44.5	79	35	21.4	2,237
Road fork	33	31	22.3	79	35	00.9	2,84o
Center of bridge	33	31	08.7	79	34	33.5	2,702
Center of bridge	33	30	54.2	79	34	03.4	2,930
Center of bridge over creek	33	30	35.4	79	33	29.0	3,486
Warsaw, center of Seaboard Air Line Ry., 200 feet south of depot, 90 feet north of road crossing, nail in tie	33	30	29.4	79	33	00.0	2,526
Road fork	33	30	05.6	79	32	47.8	2,617

South along highways in southeast corner of quadrangle.

Road fork at mail boxes	33	30	30.0	79	30	48.4	.....
Road fork at church	33	30	10.4	79	31	29.1	3,970

Magnetic declination for southeast part of quadrangle, 1° 52′ W.

South along public highways.

White Church, 100 feet southwest of, northeast corner of cross-roads; iron post stamped "Prim. Trav. Sta. No. 5 J, 1918"	33	36	20.8	79	42	03.3	.....
Road fork	33	36	04.0	79	42	33.5	3,077
Road fork	33	35	28.4	79	42	46.6	3,765
Road fork at store	33	35	13.8	79	43	24.5	3,536
Center of bridge	33	34	52.8	79	42	59.6	2,991
Road fork	33	34	31.0	79	42	53.0	2,274
Road fork	33	33	38.5	79	42	36.4	5,483
Black River, south end of bridge over	33	33	20.1	79	42	25.0	2,090
T road north	33	32	17.8	79	42	40.6	6,442
T road south	33	32	17.8	79	43	50.7	5,940
Center of bridge	33	31	54.1	79	43	47.4	2,411
Center of bridge	33	31	12.0	79	43	35.6	4,366
Gate across road	33	30	44.8	79	43	26.8	2,852
Road fork	33	30	15.4	79	43	32.8	3,012

Magnetic declination south along public highways, 1° 09′ W.

INDIANTOWN QUADRANGLE—Continued.

East along public roads near north border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of bridge	33	44	58.6	79	37	57.5	.....
Road fork	33	44	52.0	79	37	15.6	3,600
Center of bridge	33	44	34.3	79	36	24.3	4,686
Cooper's crossroads, at northwest corner, 5 feet northeast of culvert; iron post stamped "Prim. Trav. Sta. No. 37"	33	44	21.9	79	35	52.9	2,929
Road fork	33	44	04.7	79	35	12.3	3,844
Road fork	33	43	43.0	79	34	19.6	4,958
Indiantown Church, road fork, 200 feet east of	33	43	27.6	79	33	36.2	3,980
Center of bridge, the east one of three	33	42	38.2	79	32	13.9	8,558
Road fork	33	42	11.7	79	31	42.0	3,801
Center of bridge	33	41	30.7	79	30	33.4	7,120

South along Seaboard Air Line Ry. near east border of quadrangle.

North end of trestle	33	40	18.7	79	30	29.5	.....
North end of trestle	33	40	08.5	79	30	34.4	1,120
Nesmith, 90 feet northeast of depot, north side of public road, 15 feet east of center of track, 2 feet west of crossing sign; iron post stamped "Prim. Trav. Sta. No. 43"	33	39	27.0	79	30	54.5	4,527
North end of trestle	33	38	54.3	79	31	10.5	3,569
Switch stand, at spur track east, center of track opposite	33	38	17.9	79	31	28.3	3,980
Morrisville, road crossing	33	36	25.9	79	32	22.2	1,220
Road crossing	33	35	36.7	79	32	28.2	4,998
Road crossing	33	34	47.8	79	32	33.2	4,969
A. C. Lumber Co., spur track west	33	34	31.0	79	32	34.9	1,699
Road crossing	33	33	32.2	79	32	41.1	5,970
Center of trestle	33	33	01.2	79	32	44.3	3,140
Road crossing	33	32	32.4	79	32	47.3	2,930
Road crossing, second class	33	31	42.8	79	32	52.4	5,030
Road crossing, second class	33	31	13.1	79	32	55.5	3,019
Warsaw, center of track, 200 feet south of depot, 90 feet north of road crossing	33	30	29.4	79	33	00.0	4,437

Magnetic declination for north border of quadrangle, 1° 29′ W.

From post 5 north to Kingstree. (By Oscar Jones in 1918–19.)

Prim. Trav. Sta. No. 5 (previously described)	33	36	20.85	79	42	03.27	.....
Road fork southwest	33	37	03.2	79	42	05.0	4,288
Crossroads	33	37	36.2	79	42	01.2	3,351
Road fork	33	38	10.0	79	41	50.7	3,530
Road fork	33	38	46.9	79	41	13.6	4,870
T road south, at Grayson store	33	39	23.9	79	40	42.4	4,584
T road north, at old storehouse	33	39	39.1	79	41	28.7	4,209
T road south, in front of house	33	40	29.1	79	41	15.9	5,163
Road fork	33	41	07.7	79	41	13.2	3,916
Road fork	33	41	35.0	79	41	33.8	3,262
T road south, near Cooper Bros. store	33	42	10.7	79	41	40.3	3,646
Center of road, opposite church	33	42	03.6	79	42	47.1	5,689
Road fork, at angle in road	33	41	54.4	79	43	44.4	4,931
Road fork at store	33	41	38.3	79	44	21.1	3,500
Center of bridge	33	41	27.4	79	44	47.0	2,451

Magnetic declination near west border of quadrangle, 1° 21′ W.

JAMES ISLAND 7½″ QUADRANGLE.

Along highways in northern part of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of Ellis Bridge	32	44	42.1	79	58	11.2	.....
Angle of 48° between two straight stretches of road	32	44	16.9	79	57	59.4	2,732
T road north	32	44	03.0	79	58	08.2	1,593
Crossroads	32	43	47.3	79	57	22.6	4,211
Crossroads	32	43	38.3	79	56	54.0	2,599
Angle of 26° in road, center line both ways	32	43	48.6	79	56	01.7	4,579
Crossroads	32	44	26.8	79	54	57.4	6,713

KILLIAN QUADRANGLE.

For positions in Killian quadrangle see Camp Jackson.

KINGSTREE QUADRANGLE.

Northeast along railroad to Lane, thence southeast to Andrews. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Second-class road crossing	33	30	00.6	79	53	16.7	.....
Lane station, 250 feet south of, 50 feet east of center of road bed, 20 feet north and 50 feet east of public-road crossing, directly in front of Lanes Hotel; iron post stamped "Prim. Trav. Sta. No. 21, 1917 Mac." Azimuth to semaphore post, 20° 20′ 45″	33	31	10.7	79	52	50.6	7,422
Second-class road crossing, at colored church	33	31	19.7	79	52	17.3	2,965
Switch stand at east leg of Y	33	31	13.4	79	57	50.5	2,350
Opposite milepost Geo. 33	33	30	47.5	79	50	01.3	9,609
Public-road crossing at switch stand	33	30	43.7	79	49	45.0	1,430
Milepost Geo. 32	33	30	32.8	79	48	59.9	4,045
Farm-road crossing	33	30	16.6	79	47	51.1	5,985
Taft station, road crossing at	33	30	03.2	79	46	54.6	4,970

Northeast along Atlantic Coast Line R. R. (By Oscar Jones in 1918.)

Lane, "Prim. Trav. Sta. No. 21, 1917 Mac." (previously described)	33	31	10.7	79	52	50.6	.....
Center of small trestle	33	31	48.3	79	52	37.7	3,957
Road crossing	33	32	09.4	79	52	30.0	2,230
Center of small trestle	33	32	37.0	79	52	20.0	2,910
Road crossing	33	32	50.5	79	52	15.1	1,430
Road crossing	33	33	58.0	79	51	50.7	7,130
Road crossing	33	34	35.3	79	51	37.2	3,940
Salters station, road crossing	33	35	44.2	79	51	12.2	7,270
South end of trestle	33	36	55.0	79	50	46.4	7,490
South end of trestle	33	38	01.3	79	50	22.4	7,000
South end of trestle over Black River	33	38	50.7	79	50	04.4	5,220
North end of trestle over Black River	33	39	07.3	79	49	58.4	1,750
Kingstree, 100 feet north of depot, west side of track, south side of street, 2 feet west of U. S. mail box; iron post stamped "Prim. Trav. Sta. No. 1 J, 1918"	33	39	49.6	79	49	43.4	4,462
Road crossing	33	40	56.6	79	49	18.7	7,088
Road crossing	33	42	00.8	79	48	55.4	6,780
Road crossing	33	42	54.7	79	48	35.8	5,690
Road crossing	33	43	18.7	79	48	27.0	2,540
Brockington station, road crossing at	33	43	51.5	79	48	15.1	3,460
Road crossing	33	44	48.2	79	47	54.4	5,990

Magnetic declination northeast along Atlantic Coast Line R. R., 1° 44′ W.

East along Georgetown road. (By Oscar Jones in 1918.)

Kingstree, Prim. Trav. Sta. No. 1 J, 1918 (previously described)	33	39	49.6	79	49	43.4	.....
Crossroads	33	39	40.9	79	49	04.2	3,431
Center of road, opposite white house on south side of road	33	39	08.5	79	48	05.7	5,932
Road fork	33	38	34.8	79	46	57.6	6,685
Road fork, at Nixon store	33	38	26.1	79	46	25.7	2,840
Road fork	33	38	23.3	79	46	14.3	1,000
Center of culvert	33	37	52.4	79	45	13.2	6,038

Magnetic declination along Georgetown road, 1° 17′ W.

Along public highways from Lane to Kingstree. (By Oscar Jones in 1918.)

Lane station, Prim. Trav. Sta. No. 21, 1917, Mac (previously described)	33	31	10.7	79	52	50.6	.....
Center of bridge	33	31	19.0	79	53	10.7	1,898
Road fork	33	31	30.0	79	53	39.5	2,679
Road fork	33	31	15.7	79	54	02.3	2,410
Center of bridge	33	30	58.9	79	54	29.1	2,830
Road fork south	33	30	41.4	79	54	57.1	2,960
Road fork	33	30	05.0	79	55	55.3	6,143
Gin, at road fork	33	30	46.6	79	56	35.1	5,394
Center of bridge	33	31	05.3	79	57	00.2	2,839
Crossroads	33	31	19.4	79	57	28.6	2,800
Center of bridge	33	31	31.2	79	57	58.3	2,787
Road fork at store	33	31	35.3	79	58	18.0	1,720
Road fork	33	32	16.9	79	58	51.9	5,086

KINGSTREE QUADRANGLE—Continued.

Along public highways from Lane to Kingstree—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Graveyard, crossroads at	33	32	30.2	79	59	01.6	1,577
Road fork through gate	33	33	33.1	79	59	20.8	6,560
Road fork	33	34	06.6	79	59	20.4	3,394
Greelyville, 70 feet south of depot, 20 feet south of track, 2 feet east of crossing sign; iron post stamped "Prim. Trav. Sta. No. 35 J, 1918"	33	34	56.9	79	59	18.7	5,080
Crossroads	33	35	43.8	79	58	36.5	5,940
Center of bridge, the north one of two	33	36	07.0	79	58	10.1	3,237
T road south near gin	33	36	24.6	79	57	21.8	4,460
Road fork, 100 feet southeast of store	33	37	05.1	79	57	53.2	4,881
Sawmill, road fork	33	37	33.3	79	57	24.8	3,730
Road fork, through gate at well	33	38	16.2	79	57	03.5	4,697
Road fork at store	33	38	38.9	79	56	51.2	2,520
Road fork	33	39	00.3	79	57	43.8	4,946
Crossroads	33	39	01.4	79	58	03.6	1,682
Crossroads at schoolhouse	33	38	53.8	79	59	18.9	6,409
Road fork to house	33	39	49.2	79	58	57.6	5,878
Road fork, through gate	33	40	14.7	79	58	39.2	3,014
Center of culvert	33	40	59.2	79	58	00.4	5,569
Center of bridge	33	41	32.9	79	57	31.0	4,215
Martin's crossroads, northeast corner of; iron post stamped "Prim Trav. Sta. No. 36 J, 1918"	33	41	58.6	79	57	28.2	2,609
Road fork	33	41	57.8	79	56	56.5	2,679
Road fork, through gate	33	41	55.8	79	56	05.0	4,353
Road fork at bridge	33	41	50.9	79	55	45.4	1,729
Center of bridge	33	41	26.4	79	54	47.1	5,512
Center of bridge	33	40	54.5	79	54	11.1	4,430
Road fork to house	33	40	27.0	79	53	40.0	3,820
Road fork	33	39	58.7	79	53	07.7	3,961
Road fork	33	39	27.6	79	51	44.8	7,676
Road fork	33	39	21.4	79	51	00.4	3,812
Center of bridge	33	39	25.6	79	50	29.4	2,656
Black River, west abutment of steel bridge over	33	39	43.5	79	50	11.0	2,382
Kingstree Prim. Trav. Sta. No. 1 J, 1918 (previously described)	33	39	49.6	79	49	43.4	2,409

Unchecked spur line south along highways.

Crossroads (previously described)	33	31	19.4	79	57	28.6	.....
Gate across road	33	30	40.1	79	58	00.2	4,790

Northeast along highways to Cades.

Martin's crossroads, iron post No. 36 (previously described)	33	41	58.6	79	57	28.2	.....
Road fork	33	42	45.3	79	57	04.4	5,131
Road fork	33	43	11.6	79	56	25.6	4,225
Road fork	33	43	24.7	79	56	04.9	2,197
Black River, north end of bridge over	33	43	44.1	79	55	51.6	2,259
Joye store, road fork, 150 feet west of	33	44	03.0	79	55	42.8	2,047
Road fork	33	44	37.0	79	55	57.3	3,648

Magnetic declination northeast along highways to Cades, 1° 07′ W.

Southeast along highway. (By Oscar Jones in 1918.)

Center of road, opposite gin house	33	44	31.2	79	59	22.4	.....
Road forks	33	44	25.4	79	58	57.2	2,210
Crossroads, at Workman	33	44	03.2	79	58	02.7	5,127
Center of bridge	33	43	48.8	79	57	39.6	2,438
Center of bridge	33	43	36.8	79	56	48.8	4,456
Center of bridge	33	43	46.8	79	56	27.3	2,080

East to Greelyville.

T road north	33	33	50.6	79	59	47.3	.....
Crossroad, at Flowing Well	33	34	35.5	79	59	43.6	4,553
Greelyville, Prim. Trav. Sta. No. 35 (previously described)	33	34	56.87	79	59	18.73	3,015

Magnetic declination for west part of quadrangle, 0° 50′ W.

KINGSTREE QUADRANGLE—Continued.

From post 5 north to Kingstree.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork	33	41	06.8	79	45	30.7	.....
Road fork	33	40	45.2	79	46	38.9	6,164
T road north at schoolhouse	33	40	31.0	79	47	31.3	4,658
T road south	33	40	09.5	79	48	26.7	5,164
T road south at graveyard	33	39	59.8	79	49	03.0	3,216
Kingstree, Prim. Trav. Sta. No. 1 (previously described)	33	39	49.6	79	49	43.4	3,572

Magnetic declination for east border of quadrangle, 1° 16′ W.

LEXINGTON QUADRANGLE.

South near west border of quadrangle. (By E. L. McNair in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Southern Ry., crossing on	33	50	58.6	81	29	45.8	.....
Crossroads, near Mims flag station	33	50	44.2	81	29	35.6	1,694
Public-road crossing of Southern Ry. (line follows railroad from here)	33	50	28.7	81	29	23.1	1,889
Road crossing of Southern Ry	33	50	08.9	81	29	08.3	2,359
Road crossing, first one south of Hall flag station	33	49	55.5	81	28	54.8	1,765
Public-road crossing	33	49	47.5	81	28	49.4	938
Samaria, about 40 feet southeast of road crossing, 2.5 feet south of corner fence post of yard fence, residence of W. Westmoreland, 20 feet east from center of track; iron post stamped "Prim. Trav. Sta. No. 11, 1919, Mac." Azimuth to milepost 7,700 feet distant (sighted center of bolt), 149° 05′ 20″; to top of crossing sign post, 0.4 mile distant, 151° 42′ 20″	33	49	31.8	81	28	38.9	1,823
Crossroad	33	48	36.0	81	28	04.3	6,348
Nail in root of cedar tree, at corner of vacant house	33	48	32.8	81	28	17.0	1,124
Forks of road, about 65 feet south of mail box	33	48	14.8	81	29	01.1	4,138
Crossing of North Fork of Edisto River, center of	33	48	06.2	81	29	00.8	864
Forks of road, point is 165 feet S. 28° W. from T road corner	33	48	05.8	81	29	56.6	4,703

Magnetic declination along west border of quadrangle, 00° 14′ E.

North across southeast corner of quadrangle. (By E. L. McNair in 1919.)

Creek crossing, center of	33	45	08.4	81	15	11.8	.....

From Pelion north along roads to Lexington.

Crossroads	33	46	04.3	81	15	15.7	.....
In root of 10-inch blazed oak tree, 10 feet northeast of road; wire nail and copper washer	33	46	42.7	81	15	43.0	4,511
Second-class crossroad	33	47	11.9	81	16	15.5	4,026
Second-class T road west, at mail box, 560 feet south of forks of road: iron post stamped "Elev. 424"	33	47	31.45	81	16	21.30	2,034
Forks of road, about 400 feet south of another fork	33	47	55.6	81	16	14.0	2,523
Pelion, 4.5 miles northwest of, 25 feet north of dim crossroad, a broad road leading N. 55° W. and S. 55° E.; iron post stamped "Elev. 442." Azimuth to copper nail in stump, distance 530.5 feet, 121° 41′ 11″	33	48	13.54	81	16	22.24	1,937
Center of crossroads, southeast of Florence Church	33	48	35.4	81	16	44.1	2,871
Pelion, 5.6 miles northwest of, 195 feet east of Florence Church, on east side of road to Lexington, at southwest corner of garden fence; iron post stamped "Prim. Trav. Sta. No. 14, 1919 S." Azimuth to large double-column tombstone in cemetery, 200 feet distant, 50° 34′ 26″; to nail and copper washer in root of large pine tree, 365 feet distant, 85° 51′ 56″	33	49	05.09	81	16	53.82	3,113
Center of road crossing, 0.6 mile northwest of Florence Church	33	49	30.7	81	17	14.7	3,122
Fork of road	33	50	10.3	81	17	07.8	4,045
Road fork	33	51	07.3	81	17	15.6	5,806
Road forks	33	51	23.1	81	17	20.7	1,645
Center of bridge over mill stream	33	51	42.8	81	17	12.4	2,112
Center of crossroads	33	52	03.4	81	17	09.4	2,096

LEXINGTON QUADRANGLE—Continued.

From Pelion north along roads to Lexington—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Lexington, 8.3 miles southwest of, 35 feet east of road fork, 10 feet south of public road; iron post stamped "Elev. 303." Azimuth to double-column tombstone, 405 feet distant, 250° 55′ 05″	33	52	13.86	81	17	01.40	1,264
Center of bridge over Congaree Creek	33	52	21.3	81	16	52.9	1,041
Road fork	33	52	48.6	81	16	39.8	2,978
Lexington, 6.1 miles southwest of, in northwest angle of cross-roads; iron post stamped "Prim. Trav. Sta. No. 15, 1919 S. Elev. 483." Azimuth to nail 8.5 feet above ground in large pine tree, 680 feet distant, 210° 11′ 30″	33	53	48.69	81	15	52.10	7,288
Road forks	33	54	35.0	81	15	30.2	5,031
Red Bank, road forks, 1.0 mile southwest of	33	54	57.6	81	15	03.6	3,205

From west border of quadrangle east along north border to Lexington. (By R. B. Steele and Oscar Jones in 1919.)

Hollow Creek, center of bridge over	33	59	34.6	81	27	50.7	.....
Batesburg, about 8.5 miles northeast of, 400 feet northeast of Cedar Grove Church, in southeast angle of crossroads; iron post stamped "Prim. Trav. Sta. No. 16, 1919 S." Azimuth to tall monument in cemetery, 420 feet distant, 356° 21′ 07″, to nail and copper washer in tree, 590 feet distant, 284° 08′ 22″	33	59	13.55	81	27	37.05	2,416
Crossroads at Salem Church	33	59	22.9	81	27	14.1	2,155
T road northwest	33	59	52.0	81	26	36.2	4,337
Road fork	33	59	24.9	81	22	32.0	.....
Crossroads	33	58	50.5	81	21	57.4	4,540
Road fork	33	58	34.9	81	21	42.2	2,028
Crossroads	33	58	35.1	81	21	05.9	3,063
Road fork	33	58	38.2	81	20	26.6	3,329
Crossroads	33	58	41.7	81	19	54.6	2,710
Road fork	33	58	45.7	81	18	26.6	7,424
Road fork	33	58	51.9	81	17	21.8	5,502
Road fork	33	58	47.4	81	16	24.4	4,850
Road fork	33	59	00.1	81	15	28.4	4,892

Magnetic declination for north border of quadrangle, 0° 29′ W.; for east border, 0° 05′ W.

From Gilbert south along public road to Samaria.

Gilbert, "Prim. Trav. Sta. No. 48 H, 1918" (previously described)	33	55	29.09	81	23	35.57	.....
Road fork	33	55	10.8	81	23	05.4	3,144
Crossroad	33	54	40.2	81	22	37.6	3,887
Road fork, Pelion road	33	54	20.4	81	22	20.5	2,466
Center of bridge	33	53	43.4	81	22	15.9	3,752
Crossroads	33	53	01.6	81	22	23.4	4,271
Center of bridge at mill	33	52	21.1	81	22	48.1	4,600
Crossroads	33	51	30.8	81	22	29.7	5,312
Crossroads, at telephone pole	33	51	03.0	81	22	28.0	2,815
Road fork	33	50	36.4	81	22	36.8	2,785
Gilbert, 7 miles south of, in southeast corner of crossroads, 250 feet south of bridge over mill pond; iron post stamped "Prim. Trav. Sta. No. 90, 1919 J"	33	49	59.71	81	22	58.23	4,132
Crossroads	33	49	30.4	81	23	32.4	4,131
Road fork	33	49	15.8	81	24	01.7	2,879
Center of road, opposite mail box at road fork	33	48	36.5	81	24	14.8	4,124
Crossroads	33	48	11.8	81	24	52.1	4,015
T road east	33	47	53.3	81	24	57.8	1,936
Road fork at house	33	47	14.2	81	25	12.5	4,145
Center of bridge at mill pond	33	47	03.0	81	26	07.0	4,739
Steadman, 120 feet north of depot, road crossing on Southern Ry.	33	46	59.6	81	26	24.9	1,547
Public-road crossing	33	47	57.6	81	27	27.8	7,902
Althea, road crossing	33	48	45.0	81	27	43.7	4,983
Road crossing	33	49	17.5	81	27	58.7	3,514
Samaria, "Prim. Trav. Sta. No. 11, 1919 Mac." (previously described)	33	49	31.81	81	28	38.83	3,682

Magnetic declination, 00° 00′.

LEXINGTON QUADRANGLE—Continued.

East along Southern Ry. in north part of quadrangle. (By George T. Hawkins in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Second-class road crossing	33	55	20.0	81	29	11.8	.....
Fredonia, road crossing	33	55	37.6	81	27	42.3	7,751
Road crossing at house	33	55	45.0	81	26	42.8	5,068
Road crossing	33	55	39.1	81	26	01.2	3,560
Summit station (same as Bull. 181, p. 150)	33	55	29.0	81	25	19.1	3,688
Old value	33	55	24.7	81	25	20.6	.....
Summit station, middle of crossing, joint in south rail of main line	33	55	28.8	81	25	18.7	37
Gilbert, 923 feet west of bench mark, at road crossing; joint of south rail	33	55	29.8	81	23	46.5	7,770
Gilbert, 20 feet north of main line, 10 feet west of road crossing; iron post stamped "Prim. Trav. Sta. No. 48 H, 1918"	33	55	29.09	81	23	35.57	923
Second-class road crossing	33	55	30.4	81	22	54.7	3,445
Hayes, road crossing	33	55	39.5	81	22	21.8	2,917
Fowler, 400 feet west of station, road crossing	33	55	28.7	81	21	20.7	5,267
Road crossing, 500 feet north to house	33	55	44.7	81	20	17.7	5,548
Elsie station, road crossing	33	55	54.6	81	20	02.9	1,594
Ethon, road crossing	33	55	52.6	81	18	46.5	6,447
Barr station	33	56	21.6	81	17	33.8	6,790
Barr station (Bull. 181, p. 150). Astronomic value	33	56	17.5	81	17	36.4	.....
Road crossing	33	56	39.6	81	16	28.3	5,809
Second-class road crossing	33	56	49.5	81	15	49.8	3,405
Road crossing near house	33	56	58.9	81	15	16.1	2,998

No declination observed.

LODGE QUADRANGLE.

Near Ruffin. (By H. S. Senseney in 1917–18.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Ruffin station, intersection of tangents at, 70 feet east to road crossing at east end of station	33	00	13.2	80	48	57.8	.....
Road forks	33	00	01.9	80	49	22.3	2,386

Southeast along Bamberg, Ehrhardt & Walterboro Ry. (By E. L. McNair in 1918.)

Road crossing	33	05	23.2	80	59	47.9	.....
Public-road crossing	33	04	58.4	80	59	00.1	4,775
Public-road crossing	33	04	22.0	80	57	49.9	7,020
Lodge station, public-road crossing	33	04	02.7	80	57	12.9	3,700
Public-road crossing	33	03	51.6	80	56	51.5	2,140
Intersection of main line of Hampton & Branchville and Atlantic Coast Line railroads at Hampton Junction station	33	03	24.3	80	55	58.6	5,289
Second-class road crossing	33	03	06.0	80	55	23.1	3,540
Public-road crossing	33	02	44.8	80	54	42.0	4,100
Caldwell station, milepost 30	33	02	30.3	80	54	14.1	2,790
East end of long trestle bridge, 100 feet west of tank	33	02	23.4	80	53	38.0	3,155
Colleton station, crossing of Lumber Co.'s railroad	33	02	17.6	80	52	50.3	4,105
Public-road crossing	33	02	13.3	80	52	14.1	3,110
Public-road crossing	33	02	09.1	80	51	39.5	2,980
Williams station, 155 feet S. 52° E. of, 20 feet N. 40° E. of center of main track, about 14 feet west of spur track, on bank, 3 feet higher than track; iron post stamped "Prim. Trav. Sta. No. 91, Mac. 1917." Azimuth to nail in base of post, 500 feet distant, 319° 38′ 30″	33	01	59.4	80	50	32.0	5,835
Second-class road crossing	33	01	32.5	80	50	08.2	3,391
Pile bridge over creek	33	00	56.2	80	49	36.4	4,550
Ruffin station, intersection of tangents at	33	00	13.2	80	49	57.8	5,454

Southeast along Southern Ry. (By E. L. McNair in 1918.)

Road crossing	33	14	44.1	80	47	44.1	.....
Private-road crossing	33	14	35.8	80	47	14.8	2,625
Road crossing	33	14	16.6	80	46	07.5	6,040
Public-road crossing	33	14	09.4	80	45	42.2	2,270
Second-class road crossing, at east end of siding	33	13	58.9	80	45	04.8	3,345

LODGE QUADRANGLE—Continued.

South along highways near east border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Fork of road	33	14	13.3	80	48	53.0	
T road south, second class	33	13	06.4	80	48	49.0	6,768
Fork of road, 15 feet east of large oak tree	33	12	28.9	80	48	14.9	4,770
Second-class crossroad	33	11	44.4	80	48	16.7	4,500
Center of short span over Edisto River	33	10	38.9	80	48	07.5	6,658
U. S. River Engineers bench mark	33	10	37.5	80	48	07.4	142
Branchville, about 5.5 miles south of, on road to Smoaks, 800 feet south of Edisto River, 25 feet northeast of old crossroad, on bank; iron post stamped "Prim. Trav. Sta. No. 9, 1918 Mac." Azimuth to nail in small pine tree 100 feet distant, 34° 22′	33	10	31.7	80	48	11.5	683
Crossroads	33	09	49.3	80	48	43.6	5,076
Lane northwesterly	33	09	08.5	80	48	43.3	4,126
T road westerly	33	08	34.4	80	48	42.8	3,446
Crossroads	33	07	34.2	80	48	40.9	6,088
Forks of road	33	06	47.6	80	48	31.6	4,766
T road east	33	06	09.2	80	48	44.2	4,028
Smoaks, about 35 feet east of main north and south street, about 20 feet south of road leading east, about 175 feet northwest of large residence of W. H. Vann, just outside fence line, on both streets; iron post stamped "Prim. Trav. Sta. No. 5, 1918 Mac." Azimuth to south edge of chimney on W. H. Vann's residence, 310° 49′; to northeast corner of brick building of Smoaks Mercantile Co. 145° 57′	33	05	20.3	80	48	48.2	4,947
T road southerly	33	05	29.6	80	47	45.0	5,465
T lane south	33	05	28.6	80	47	07.5	3,190
Woods road southeast	33	05	28.0	80	46	06.2	5,214
Angle of 12° in road, 140 feet southwest of milepost marked "Smoaks 3 miles"	33	05	39.6	80	45	32.4	3,112

Magnetic declination along east border of quadrangle (26′ W.), 0.45° W.

Southeast along highways in southeast corner of quadrangle.

Smoaks, Prim. Trav. Sta. No. 5, 1918	33	05	20.3	80	48	48.2	
Road east	33	04	45.7	80	48	42.0	3,533
Angle of 37½° in road, on center line each way	33	03	43.3	80	47	51.0	7,659
T road west to Williams	33	03	06.5	80	47	29.5	4,139
Forks of road	33	02	41.3	80	47	23.3	2,599
Angle of 22° 40′ in road, at corner of yard fence	33	02	30.2	80	46	52.5	2,845
Forks of road, dim road northeast, 15 feet south of fence corner	33	02	30.0	80	45	58.7	4,588
Forks of road	33	02	24.0	80	45	26.4	2,814

Magnetic declination for southwest corner of quadrangle, 0° 25′ W.

West along highways near center of quadrangle.

Road southwesterly	33	08	50.2	80	45	24.3	
Crossroads	33	09	31.2	80	46	19.3	6,251
Fork of road, 400 feet northeast of church	33	10	17.9	80	47	44.6	8,652
Bamberg and Colleton county line, center of road, at marble post	33	10	28.3	80	48	06.8	2,165
Branchville, 5.5 miles south of, Prim. Trav. Sta. No. 9, 1918	33	10	31.7	80	48	11.5	525
Crossroads	33	11	04.2	80	49	03.6	5,515
Dim road southwest	33	11	27.2	80	49	45.9	4,279
Dim road south near top of hill	33	11	53.3	80	50	19.2	3,868
Crossroad south	33	12	14.6	80	50	53.1	3,596
Fork of road	33	12	41.6	80	51	48.1	5,414
Farrel's store, crossroads	33	12	51.3	80	52	22.1	3,049
Fork of road	33	11	59.5	80	53	28.0	7,667
Fork of road	33	10	55.3	80	53	54.1	6,856
Second-class road easterly	33	10	36.2	80	53	57.9	1,955
Branchville, about 9 miles south of, on road to Ehrhardt, near residence of H. A. Stokes, 20 feet east of road, at driveway to house; iron post stamped "Prim. Trav. Sta. No. 10, 1918 Mac"	33	10	02.1	80	54	29.8	4,382
Gateway across road	33	09	16.4	80	54	44.0	4,780
Fork of road, near five mail boxes	33	08	51.8	80	54	54.6	2,638
Fork of road, 70 feet east of old schoolhouse	33	08	34.8	80	54	54.4	1,711
Fork of road southeast	33	08	16.5	80	54	54.6	1,855
Fork of road, 20 feet N. 47° E. to oak tree	33	07	56.1	80	55	27.2	3,454
Little Salkehatchie River, bridge over	33	07	45.1	80	56	12.2	3,985
Crossroad	33	07	30.5	80	57	22.7	6,170
Fork of road	33	07	20.8	80	57	58.4	3,185
Fork of farm road north	33	07	05.6	80	58	55.5	5,096

Magnetic declination through middle of quadrangle, 23′ W.

LODGE QUADRANGLE—Continued.

From Farrel's store northwest along highway to Midway. (By E. L. McNair in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossroads at Farrel's store	33	12	51.34	80	52	22.08	.....
Forks of road near small bridge	33	13	12.8	80	52	53.1	3,416
T road southwest	33	13	34.1	80	53	16.8	2,948
Forks of road, 90 feet northwest of mail box	33	13	42.0	80	53	32.7	1,566
T road north 30° east	33	14	11.5	80	54	08.1	4,233
T road northeast	33	14	22.8	80	54	35.5	2,592
T road southwest near old church	33	14	33.6	80	55	01.3	2,448

Magnetic declination for north border of quadrangle, 0° 12′ W.

LORIS QUADRANGLE.

Along highways near south border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Forks of road, 500 feet east of butter store	34	00	21.8	78	45	37.9	.....
Creek crossing	34	00	01.8	78	54	16.2	.....
Forks of road	34	00	15.6	78	55	16.3	5,256
Creek crossing	34	00	30.4	78	55	35.0	2,167
Creek crossing	34	00	56.0	78	56	12.0	4,043
Along Atlantic Coast Line R. R. from Allbrook to Gurley.							
Allbrook, 50 feet south of south end of station, center of track and road crossing	34	01	11.7	78	56	47.3	3,377
Center of track, opposite water tank	34	01	00.5	78	57	05.9	2,012
Road crossing	34	00	48.8	78	57	25.4	2,030
Center of trestle	34	00	40.3	78	57	39.6	1,469
Road crossing	34	00	30.8	78	57	56.0	1,680
North end of trestle	34	00	25.7	78	58	35.6	3,379
Gurley, center of track, opposite center of depot	34	00	08.1	78	59	11.8	3,533
Center of bridge	34	00	17.8	78	59	48.8	3,264

Magnetic declination for south border of quadrangle, 2° 16′ W.

MANNING QUADRANGLE.

Northwest along Atlantic Coast Line R. R. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Second-class road crossing	33	35	20.4	80	00	01.3	.....
Second-class road crossing	33	35	31.6	80	00	21.8	2,070
Greelyville, 2 miles northwest of, U. S. P. B. M. Elev. 80	33	35	57.2	80	01	08.9	4,753
Center of track, opposite milepost 28	33	37	10.7	80	02	45.1	11,017
Foreston public road, 30 feet west of track, west side of road, 50 feet east of depot; iron post stamped "Elev. 85"	33	37	54.8	80	03	41.7	6,538
Center of track, opposite milepost 26	33	38	21.5	80	04	16.7	4,012
Second-class road crossing	33	38	59.1	80	05	15.3	6,244
Second-class road crossing	33	39	06.0	80	05	31.2	1,510
Road crossing	33	39	20.8	80	06	05.4	3,259
Center of track, opposite switch stand	33	39	44.7	80	06	00.6	5,250
Wilsons Mill, 80 feet west of depot, 20 feet north of track; iron post stamped "Prim. Trav. Sta. No. 45. Elev. 119"	33	39	46.6	80	07	04.6	384
Center of trestle	33	40	10.2	80	07	59.5	5,218
Center of trestle	33	40	53.8	80	09	40.3	9,590
Road crossing, U. S. P. B. M.	33	40	56.9	80	09	48.0	.....
Road crossing	33	41	19.4	80	10	39.6	4,917
Road crossing	33	41	36.7	80	11	19.7	3,819
Manning, 70 feet north from northwest corner of depot; iron post stamped "Prim. Trav. Sta. No. 46 J. Elev. 95"	33	42	01.3	80	12	08.7	4,826
Center of track, opposite station	33	42	44.5	80	11	59.8	4,426
Public-road crossing	33	43	00.6	80	11	45.4	2,034
Road crossing	33	43	29.8	80	11	49.4	2,976
Road crossing	33	44	19.3	80	12	26.0	5,888
Alcolu, 1,300 feet southeast of depot, at road crossing, south side of track, east side of road; iron post stamped "Elev. 117"	33	44	41.8	80	12	42.9	2,681

MANNING QUADRANGLE—Continued.

From northwest corner of quadrangle east along highway to Manning.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Center of bridge	33 43 44.2	80 14 26.0	.....
Road forks	33 43 35.4	80 14 15.2	1,279
Center of road, opposite well on south	33 43 08.7	80 13 58.5	3,037
Center of bridge	33 42 46.4	80 13 29.7	3,323
Center of bridge	33 42 13.0	80 12 45.6	5,020

East along highways. (By Oscar Jones in 1918.)

Crossroads, at gin and schoolhouse	33 44 24.7	80 11 22.1	.....
Road forks	33 44 28.0	80 11 09.1	1,150
Center of bridge	33 44 15.7	80 09 57.4	6,181
Road forks	33 44 27.8	80 09 24.6	3,027
Center of road to well between two churches	33 44 36.4	80 08 59.2	2,321
Road forks	33 44 48.2	80 08 06.7	4,592
Center of bridge	33 44 38.1	80 07 18.8	4,170
Crossroad at mail box	33 44 27.3	80 06 38.5	3,577
Midway Church, 3.5 miles southwest of, about 8 miles east of Alcolu, 0.8 mile southwest of Cypress Forks Church, at northeast corner of crossroads; iron post stamped "Prim Trav. Sta. No. 48, 1918 94." Elevation 94.227 feet	33 44 15.6	80 04 57.8	8,584
Crossroad at church	33 44 49.8	80 04 27.4	4,305
Road forks	33 44 58.2	80 01 21.6	.....
Center of bridge	33 44 46.6	80 00 30.4	4,480

Magnetic declination for center of quadrangle, 01° 04′ W.; for north border, 00° 55′ W.

From Manning south along public roads to post 60 near west border of quadrangle. (By Oscar Jones in 1919.)

Road fork (previously described)	33 43 35.36	80 14 15.24	.....
Road fork	33 43 02.7	80 14 18.3	3,313
Crossroads	33 42 09.9	80 14 26.5	5,379
Crossroads	33 41 13.8	80 14 35.7	5,720
Crossroads, Manning and Summerton	33 40 38.3	80 14 27.7	3,644
Center of bridge	33 39 49.0	80 14 09.9	5,203
Crossroads	33 39 13.1	80 13 50.1	4,001
Center of creek crossing	33 38 35.6	80 13 59.6	3,872
Road fork	33 37 42.6	80 14 34.2	6,096
Crossroads	33 37 26.1	80 14 41.9	1,790

East along public roads near south border of quadrangle (Rimini-Greelyville line).

Well at church, center of road opposite	33 32 01.8	80 14 42.4	.....
T road south at store	33 32 05.6	80 14 17.6	2,139
Center of bridge	33 32 19.6	80 13 26.7	4,528
Wyboo Swamp, center of bridge, the east one of three	33 32 22.7	80 13 12.8	1,224
Crossroads, at six mail boxes	33 32 15.4	80 12 18.5	4,655
Center of creek crossing	33 32 08.7	80 11 14.0	5,500
Road fork	33 32 05.7	80 10 44.9	2,480
Crossroads, second class	33 32 09.2	80 10 09.0	3,058
Center of creek crossing	33 32 23.5	80 08 15.0	9,759
Crossroads Charleston and Camden road, 1,300 feet west of crossing of Mil Swamp, northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 61, 1919 J"	33 32 40.59	80 07 00.45	6,544
Mill Swamp, creek crossing	33 32 46.7	80 06 48.5	1,565
Doctor Swamp, creek crossing, center of	33 32 39.5	80 05 09.2	8,016
Road fork at store	33 32 33.5	80 04 16.2	4,527
Center of bridge	33 32 17.0	80 02 58.6	6,773
T road north	33 32 18.6	80 02 05.0	4,540
T road north	33 32 21.5	80 01 13.6	4,364
Road fork	33 33 01.7	80 01 06.6	4,115
Road fork	33 33 34.0	80 00 28.8	4,560

Magnetic declination near west border of quadrangle, 1° 01′ W.; near south border, 54′ W.

MARION QUADRANGLE.

Northeast along highways near south border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork	34	00	26.4	79	20	43.0	.....
Road fork, Marion and Galavant roads, opposite mail box	34	01	04.2	79	20	48.1	3,850
South end of bridge	34	02	01.0	79	20	15.3	6,367
Crossroads, at two mail boxes	34	02	26.7	79	19	46.0	3,585
Culvert, iron pipe	34	03	22.2	79	19	12.6	6,276
Center of road, opposite church	34	03	50.7	79	18	37.4	4,128
Crossroads, Mullins and Galavant roads	34	04	32.5	79	18	09.8	4,823
Road fork	34	04	11.6	79	17	22.8	4,475
West end of bridge	34	04	04.3	79	16	12.2	5,994
West end of bridge	34	03	38.6	79	15	20.7	5,050

Magnetic declination in southeast corner of quadrangle, 1° 56′ W.

Northeast along highways to Aynor.

Road fork, 0.25 mile north of Red Hill School	34	00	16.1	79	15	33.3	.....

Checked spur line to point near southwest corner of quadrangle. (By Oscar Jones in 1918.)

Center of small culvert, at end of long tangent in road	34	00	26.2	79	25	20.9	.....
At fork of Graham, Mullin, and Eulonia roads, in front of residence of Mrs. Mary Davis, 100 feet south of southeast corner of store, in root of sycamore tree; nail	34	00	43.4	79	25	46.4	2,760

Magnetic declination near southwest corner of quadrangle, 1° 47′ W.

MAYESVILLE QUADRANGLE.

North along highways near east border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork	33	50	19.8	80	00	58.4	.....
Flowing well, at white church	33	50	39.1	80	01	18.4	2,584
New Zion, crossroads	33	50	44.9	80	01	46.6	2,449
Crossroads	33	51	30.3	80	01	36.6	4,671
Railroad crossing	33	52	38.4	80	01	06.4	7,340
Road fork to Turbeville	33	52	50.6	80	00	52.5	1,702
Railroad crossing at school	33	52	51.6	80	00	29.0	1,987
Center of bridge	33	52	39.5	80	00	12.1	1,878
Road fork to Turbeville (previously described)	33	52	50.6	80	00	52.5	.....
Turbeville, road fork, 100 feet west of post office	33	53	23.1	80	01	11.5	3,651
T road north	33	53	36.7	80	00	31.2	3,663
Center of road opposite house, bend in road	33	54	11.6	80	00	09.6	3,969
T road north at house	33	57	30.3	80	00	00.2	.....

Magnetic declination for east border of quadrangle, 0° 54′ W.

East along south border of quadrangle. (By Oscar Jones in 1918.)

Center of bridge	33	45	11.5	80	03	53.9	.....
Road forks at edge of swamp	33	45	45.4	80	03	05.2	5,350
T road southwest, 600 feet northwest of Midway Church	33	46	04.3	80	02	14.1	4,727
Road forks, at church	33	45	35.9	80	01	51.4	4,350

MAYESVILLE QUADRANGLE—Continued.

From New Zion along highways west to Sumter.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossroads	33	50	56.8	80	03	03.1	.....
Road crossing, Alcolu R. R.	33	51	08.4	80	03	22.7	2,031
T road southwest	33	52	09.6	80	04	15.2	7,609
Road forks	33	52	19.0	80	04	20.5	1,050
Center of road, opposite house on south side	33	52	51.0	80	05	14.4	5,575
Road forks	33	53	02.8	80	05	39.3	2,420
Road forks	33	53	21.7	80	06	19.6	3,899
Center of bridge	33	53	41.0	80	07	00.6	3,969
Road forks	33	53	51.8	80	07	58.8	5,023
Crossroad near gin and store	33	53	53.3	80	08	32.4	2,840
Sumter, about 12 miles east of, 0.4 mile south of Goodwill Church, 20 feet north and 15 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 49, 1918 123." Elevation 123.371 feet	33	54	24.5	80	08	48.0	3,418
Road forks	33	54	11.8	80	09	20.2	3,008
Center of the first bridge from the east on Black River Swamp (18 bridges on the swamp)	33	54	01.1	80	09	49.4	2,688
Center of bridge, the first on west edge of Black River Swamp	33	53	40.7	80	10	46.3	5,221
Road forks	33	53	39.4	80	11	08.0	1,840
Road forks, at 9-mile post	33	53	41.5	80	11	52.2	3,729
Crossroads, at gin and store	33	53	53.0	80	12	59.1	5,761
Crossroads	33	54	01.9	80	14	08.5	5,920

Along Atlantic Coast Line R. R. northwest from Greelyville to Sumter.

Center of trestle	33	45	15.0	80	13	07.1	.....
Road crossing, 100 feet southeast of depot at Harvin	33	46	02.3	80	13	42.0	5,610
Road crossing	33	46	28.5	80	14	01.4	3,120
U. S. permanent bench mark at milepost 11	33	46	47.2	80	14	15.2	2,211
Road crossing	33	47	25.1	80	14	43.3	4,511

From post 41 west along highway and railroad.

Road forks at house	33	59	55.3	80	00	04.5	.....
Crossroad at Cuningham store	33	59	30.3	80	02	43.5	.....
North end of trestle	33	59	53.7	80	11	10.4	.....
Mayesville, depot at, opposite semaphore, center of track	33	59	12.2	80	12	28.0	7,759
North end of trestle	33	58	55.9	80	13	01.3	3,257
North end of trestle	33	58	44.1	80	13	25.5	2,360
Sumter, 7.6 miles northeast of, 1.5 miles southwest of Mayesville, 30 feet south and 12 feet west of road crossing; iron post stamped "Prim. Trav. Sta. No. 51, 1918, 133." Elevation 132.593 feet	33	58	29.7	80	13	51.4	2,622

Magnetic declination for north edge of quadrangle, 00° 57′ W.; for west edge, 01° 00′ W.; for south edge, 00° 54′ W.; for center, 00° 56′ W.

CORDESVILLE QUADRANGLE.

Northeast along railroad through northwest corner of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	33	12	41.2	79	59	46.0	.....
Road crossing, just north of sawmill	33	13	22.9	79	59	27.2	4,505
Center of creek crossing, Santee Canal	33	14	00.5	79	59	10.1	4,070

Southwest along railroad.

Bethera flag station, 35 feet west of public-road crossing, 20 feet northwest of railroad track, in top of bank; iron post stamped "Prim. Trav. Sta. No. 26 Mac., 1917." Azimuth of railroad tangent southwest of post, 48° 45′	33	12	05.9	79	47	16.8	.....
Public-road crossing	33	09	08.2	79	51	17.3	27,214
Road crossing	33	08	18.3	79	52	24.9	7,640

CORDESVILLE QUADRANGLE—Continued.

Southwest along railroad—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Cordesville flag station, 95 feet west and 25 feet south from road crossing at, about 50 feet northwest of center of track, near edge of right of way; iron post stamped "Prim. Trav. Sta. No. 27, 1917 Mac." Azimuth of long railroad tangent is 48° 43′	33 07 53.7	79 52 59.1	3,829
Road crossing	33 07 28.0	79 53 33.0	3,878
Second-class road crossing	33 06 52.3	79 54 21.5	5,470
Milepost 143	33 06 30.2	79 54 51.3	3,380
Sims flag station, road crossing	33 05 49.3	79 56 02.4	7,324
Cooper River, center of draw span	33 05 35.3	79 56 30.2	2,755
Milepost 146	33 04 58.1	79 57 20.3	5,680
Public-road crossing	33 04 01.0	79 58 21.4	7,770
Milepost 148	33 03 40.4	79 58 43.6	2,810
Pine Grove flag station, 25 feet west and 10 feet north of, public road crossing at; iron post stamped "Prim. Trav. Sta. No. 28, 1917 Mac."	33 02 34.5	79 59 19.4	7,322
Road crossing	33 02 04.4	79 59 32.7	3,249
Stokes Mill, crossing of lumber company railroad	33 00 57.4	79 59 54.7	7,018

North and east along highways (Cooper River road). (By E. L. McNair in 1917.)

Milestone marked "12 miles to C"	33 00 32.7	79 51 00.6	.....
Forks of road	33 01 29.9	79 51 18.8	5,913
Crossroads, about 400 feet north of milestone marked "14 miles to C"	33 02 19.9	79 51 14.8	5,132
Angle of 42.25° in road, on center line both ways	33 03 07.4	79 51 31.4	5,013
Cainhoy, 10 miles north of, about 0.7 mile northeast of negro church and gate entrance to Chisolm's plantation, 850 feet northeast of creek bridge, 10 feet southeast of center of road, opposite a gate in wire fence on north side of road; iron post stamped "Prim. Trav. Sta. No. 53, 1917 Mac."	33 03 43.3	79 51 02.5	4,382
Crossroads, at entrance to farm on west	33 04 38.9	79 50 25.4	6,450
Lane north to Mr. Gibb's store and gin and Huger post office	33 05 09.3	79 49 27.7	5,788
Crossroads, 100 feet southwest of milestone 19	33 05 28.4	79 48 43.6	4,268
Bridge over Quimby Creek, small boats run to Charleston	33 05 38.6	79 48 28.9	1,559
Forks of road at R. L. Caisson's store	33 05 49.5	79 48 12.9	1,747
Angle of 13.50° in road, on center line both ways	33 06 47.6	79 48 19.2	5,902
Huger bridge, about 1,500 feet south of, at junction with Major Road, 20 feet west of road, on line of Major Road running east, about 2 miles north of R. L. Caisson's store, near Quimby Creek; iron post	33 07 37.6	79 48 30.9	5,159
Angle of 12.25° in road, on center lines	33 07 32.4	79 47 57.2	2,914
Road crossing, on road called Major Road	33 07 33.8	79 46 54.3	5,350
Third-class road, crossing of	33 08 10.1	79 46 59.8	3,700
Abandoned tramroad, crossing of	33 08 54.2	79 47 06.6	4,500
Public-road crossing	33 09 28.9	79 47 11.9	3,530
Public-road crossing	33 10 02.9	79 47 17.1	3,470
Angle of 21° in road, on center line both ways	33 10 41.5	79 47 33.7	4,153

Northwest along highways in northeast corner of quadrangle.

Forks of road	33 11 22.8	79 47 33.8	4,180
Prim. Trav. Sta. No. 26 at Bethera (previously described)	33 12 05.9	79 47 16.8	4,588
Angle of 37° in road, about 130 feet northwest of bridge	33 12 32.6	79 47 54.7	4,199
Forks of road	33 12 47.2	79 48 11.4	2,038
Forks of road	33 13 02.6	79 48 45.5	3,296
Angle in road, at northwest edge of swamp	33 13 41.8	79 50 19.4	8,906
Angle of 23° in road, on center line both ways	33 14 48.4	79 51 16.3	8,320

Southwest along highways in northwest corner of quadrangle.

Angle of 29.5° in road, on center line both ways	33 14 38.4	79 56 29.2	.....
Junction point	33 13 56.3	79 56 30.1	4,260
Second-class crossroad	33 13 49.7	79 56 30.3	670
T road southeast	33 13 17.9	79 56 54.3	3,811
Moncks Corner, 3 miles northeast of, 40 feet east of forks of road, 0.6 mile east of Santee Canal, road southeast to Cordesville and northeasterly to Bethera; iron post stamped "Prim. Trav. Sta. No. 70, 1917 Mac."	33 12 42.4	79 57 59.4	6,599
Santee Canal	33 12 42.7	79 58 38.4	3,316
Road forks	33 11 30.6	79 59 47.5	9,361

CORDESVILLE QUADRANGLE—Continued.

Northwest along Tuxbury Lumber Co.'s railroad near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing	33 04 13.5	79 45 15.5	.....
Intersection of two long railroad tangents	33 04 26.8	79 45 26.9	1,650
Road crossing	33 05 07.3	79 45 46.3	4,412
Third-class road crossing	33 05 46.9	79 46 05.1	4,315
Second-class road crossing	33 06 13.8	79 46 17.8	2,825
Road crossing	33 06 25.3	79 46 23.3	1,250
Second-class road crossing	33 06 42.8	79 46 31.7	1,910
Crossing of Major Road	33 07 33.8	79 46 54.3	5,508

Magnetic declination for northeast corner of quadrangle, 1.3° W.; for northwest corner, 1.0° W.; for east border, 1.3° W.

MYRTLE BEACH QUADRANGLE.

Northeast along highways in north central part of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Center of bridge	33 41 06.6	78 58 53.8	.....
Socastee, road fork	33 41 09.4	78 58 43.5	915
Road fork	33 41 03.8	78 58 11.8	2,743
Road fork	33 41 07.1	78 57 50.1	1,863
Center of bridge	33 41 08.3	78 57 02.8	3,996
Center of culvert over drainage ditch	33 41 16.6	78 55 38.7	7,161
Road fork at cattle dip, Burcol 3 miles	33 41 21.9	78 54 29.7	5,851
Center of bridge over canal	33 41 25.6	78 53 37.0	4,468
Myrtle Beach, 300 feet north of depot, 25 feet east of railroad track, 2 feet north of crossing sign; iron post stamped "Prim. Trav. Sta. No. 19"	33 41 39.8	78 53 02.9	3,220
Center of bridge over ditch	33 42 19.6	78 52 22.6	5,266
Road fork	33 43 12.2	78 51 29.5	6,953
Center of bridge	33 43 42.0	78 50 53.5	4,276
Blazed pine tree, on east side of road, marked "U. S."	33 44 37.9	78 50 25.0	6,148

Magnetic declination for north central part of quadrangle, 2° W.

NICHOLS QUADRANGLE.

Southeast along highways near south border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
East end of Galavants Bridge over Little Peedee River	34 03 22.8	79 14 48.9	.....
Crossroads	34 03 09.8	79 14 35.9	1,716
T road west	34 02 37.1	79 13 33.2	6,221
Crossroad	34 02 25.8	79 13 13.2	2,035
T road west	34 02 12.0	79 12 40.9	3,060
Aynor, 2 miles northeast of, southeast corner of crossroads on Conway-Galavants Ferry and Aynor roads; iron post stamped "Prim. Trav. Sta. No. 9, 1918 J"	34 01 37.8	79 11 53.6	5,274
Road fork	34 00 21.5	79 11 53.9	7,713

Magnetic declination in southwest corner of quadrangle, 2° 06′ W.

East along highways to Aynor.

Road fork	34 00 15.4	79 14 59.0	.....
Center of bridge	34 00 17.5	79 14 39.5	1,658
Crossroad at sawmill	34 00 18.5	79 14 24.8	1,243
Road fork	34 00 17.7	79 13 56.7	2,364
Road fork	34 00 18.1	79 13 28.4	2,384
Center of bridge	34 00 02.3	79 12 21.8	5,832

Magnetic declination along line, 1° 57′ W.

NICHOLS QUADRANGLE—Continued.

Along highways near southeast corner of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of bridge	34	00	22.4	79	00	14.6	.....
Old Bayboro, crossroads	34	00	33.0	79	01	19.2	5,543
Conway-Bayboro and Bayboro-Cool Spring road forks, east side of road, 100 feet northwest of church, 0.25 mile south of Old Bayboro; iron post stamped "Prim. Trav. Sta. No. 21 J, 1918"	34	00	19.3	79	00	16.7	1,401
Crossroads at sawmill	34	00	04.9	79	01	57.8	3,749

Magnetic declination near southeast corner of quadrangle, 2° 20′ W.

NIXONVILLE QUADRANGLE.

East along highways through center of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of bridge	33	49	03.0	78	58	46.5	.....
Road fork	33	49	01.5	78	58	20.2	2,224
Center of bridge	33	49	13.5	78	58	05.2	1,758
Road forks	33	49	28.1	78	57	46.0	2,189
Center of road, opposite flowing well at church and schoolhouse	33	49	18.0	78	57	10.2	3,190
Center of road, opposite house on south side of road	33	49	14.5	78	56	03.5	5,633
Center of road, opposite house and flowing well on north side of road	33	49	19.1	78	55	17.0	3,954
Center of bridge	33	49	12.7	78	54	24.3	4,497
Nixonville, 5 feet north of northwest corner of churchyard fence, 50 feet south of flowing well; iron post stamped "Prim. Trav. Sta. No. 22 J, 1918"	33	50	02.9	78	53	03.8	8,479
Road fork southeast	33	50	09.8	78	52	28.1	3,090
Crossroads, 100 feet east of two mail boxes	33	50	36.8	78	52	07.0	3,256
Road fork at small stream	33	50	28.0	78	51	29.5	3,283
Road fork	33	50	08.6	78	50	51.8	3,744
Center of bridge, the northern one of two	33	50	32.2	78	50	18.7	3,666
Center of road, opposite schoolhouse	33	51	08.0	78	49	44.5	4,626
Center of road, opposite white church	33	51	14.6	78	48	50.7	4,588
Road fork	33	51	21.4	78	48	12.6	3,289
Road fork	33	51	20.7	78	47	30.9	3,522
Bridge over ditch	33	51	07.4	78	46	30.1	4,816
Crossroads at church	33	51	11.6	78	46	05.8	2,592
Crossroads	33	51	23.0	78	45	02.9	5,421

Magnetic declination through center of quadrangle, 2° W.

Northeast along highways in southeast part of quadrangle.

Small creek crossing	33	45	02.9	78	49	32.2	.....
Center of road, opposite pine tree on west side of road, blazed and marked "U. S."	33	45	49.5	78	48	47.6	6,026
Singleton Swash and Atlantic Coast, 1 mile west of, southwest corner of crossroads of Myrtle Beach and Little River road and Singleton Swash road; iron post stamped "Prim. Trav. Sta. No. 20 J, 1918"	33	45	59.8	78	48	26.5	2,060
Center of road, opposite pine tree on east side of road, blazed and marked "U. S."	33	46	26.5	78	47	45.8	4,369
Center of bridge	33	46	34.8	78	47	38.9	1,017
Crossroads	33	46	56.1	78	47	27.3	2,367
Road fork	33	47	32.8	78	47	31.3	3,725
Crossroads	33	47	46.2	78	47	14.6	1,950
Road fork	33	48	12.9	78	47	16.6	2,706
Center of road, opposite charcoal kiln	33	49	00.6	78	46	33.8	6,025
Crossroads, 600 feet north of church	33	49	24.7	78	45	50.0	4,429
Road fork	33	49	49.1	78	45	01.6	4,769

Magnetic declination for southeast part of quadrangle, 1° 58′ W.

NIXONVILLE QUADRANGLE—Continued.

Northeast along highways to post 23, thence southeast.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork through gate	33	51	42.9	78	59	33.8	
Road fork to Reams Ferry	33	52	24.1	78	58	41.3	6,084
Road fork, signboard painted "Sanford 10 miles"	33	52	32.7	78	58	23.1	1,760
Center of road, opposite house on west side of road	33	53	03.8	78	57	45.7	4,450
Center of bridge	33	53	26.4	78	57	02.1	4,327
Center of road, opposite gate and lane to house on south side of road	33	53	51.8	78	55	47.3	6,812
Road forks of Loris-Conway and Conway-Shell roads	33	54	10.3	78	54	29.7	6,804
Road fork	33	54	51.7	78	54	40.7	4,282
Road fork	33	55	17.4	78	54	34.6	2,649
Road fork at bridge	33	55	32.5	78	54	22.2	1,849
Center of bridge	33	56	08.5	78	53	53.1	4,387
Road fork	33	56	29.0	78	53	45.3	2,171
Center of bridge	33	57	16.6	78	53	33.0	4,919
Beulah Church, center of road, opposite flowing well	33	58	00.7	78	53	17.5	4,644
Road fork	33	58	22.1	78	53	06.0	2,372
Road fork	33	58	34.5	78	52	46.8	2,040
Crossroads	33	58	58.5	78	52	30.2	2,797
Daisy, in southwest corner of crossroads, 1 foot east of telephone pole; iron post stamped "Prim. Trav. Sta. No. 23 J, 1918"	33	59	39.2	78	52	02.4	4,739
Crossing, over old railroad grade	33	59	32.1	78	51	21.9	3,489
T road east, at sawmill	33	59	15.3	78	50	52.2	3,026
Center of road, opposite flowing well at church and schoolhouse	33	59	11.2	78	50	12.2	3,400
Road fork, at Loris road	33	59	08.3	78	49	47.8	2,073
Road fork, 200 feet south of Cox's store	33	58	28.9	78	49	32.0	4,201
Road fork	33	57	50.4	78	48	48.9	5,333
Road fork	33	57	38.2	78	48	21.6	2,608
Center of bridge, the eastern one of three	33	57	23.4	78	47	38.9	3,894
Center of small bridge	33	56	27.5	78	46	37.1	7,683
Road fork	33	55	53.8	78	46	05.4	4,338
Chestnut crossroads	33	55	23.7	78	45	46.3	3,444
Crossroads at small culvert	33	55	25.9	78	45	01.7	3,768

Magnetic declination for northeast part of quadrangle, 2° W.

Along highways near north border of quadrangle.

Crossroads, near school	33	59	48.6	78	45	06.1	
Center of road, opposite gate, at mail box	33	59	50.1	78	52	58.0	
Crossroads	33	59	51.2	78	53	34.5	3,078

OAKTON QUADRANGLE.

Southeast and northeast along highways. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of bridge	33	56	29.8	79	29	53.2	
T road west	33	55	52.6	79	29	12.3	5,100
Road fork	33	55	18.9	79	28	35.8	4,590
Road fork	33	54	57.6	79	28	12.7	2,900
Center of road, opposite store	33	54	05.0	79	27	44.7	5,824
Seaboard Air Line Ry. crossing	33	53	40.1	79	27	32.8	2,708
Road fork	33	53	15.3	79	27	19.7	2,740
Crossing	33	52	56.5	79	27	09.4	2,090
Kingsbury, crossing of Seaboard Air Line Ry.	33	52	50.2	79	26	41.7	2,397
Poston, 100 feet south of depot, 20 feet east of track, 2 feet north of crossing sign; iron post stamped "Prim. Trav. Sta. No. 7 J, 1918"	33	52	25.2	79	25	36.7	6,084
Road fork	33	52	49.4	79	25	11.2	3,262
Allison Ferry landing, west bank of Pedee River, top of bank	33	53	01.6	79	24	34.1	3,358
Center of bridge	33	53	17.2	79	23	52.6	3,835
Center of bridge	33	53	17.8	79	23	39.1	1,140
East end of bridge	33	53	23.3	79	23	23.2	1,452
Allison Ferry, 1.5 miles northeast of, at five forks of road; iron post stamped "Prim. Trav. Sta. No. 8 J, 1918"	33	53	30.0	79	23	10.6	1,264
T road west, at old abandoned house and barn	33	53	48.9	79	22	50.4	2,557

OAKTON QUADRANGLE—Continued.

Southeast and northeast along highways—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of bridge, southern one of two	33	54	18.7	79	22	23.7	3,761
Crossing of Atlantic Coast Line R. R	33	55	03.4	79	22	02.5	4,854
Crossroads	33	55	28.0	79	21	43.8	2,952
Crossroads, 500 feet northeast of church	33	56	14.7	79	20	38.5	7,250
Road fork	33	56	38.4	79	20	35.0	2,417
T road west	33	57	38.2	79	21	00.3	6,399
Center of road, opposite church	33	58	07.9	79	21	19.6	3,416
Eulonia, road fork	33	58	30.7	79	21	12.0	2,388
Center of road, opposite large white house	33	59	11.0	79	20	54.5	4,330
Center of bridge, northern one of two	33	59	39.7	79	20	29.5	3,587

Magnetic declination southeast and northeast along highways, 1° 56′ W.

Near west border of quadrangle.

Center of bridge	33	59	51.6	79	15	29.8	.....

Along highways in southwest part of quadrangle.

Crossroads, south of church	33	45	15.14	79	18	58.6	.....
Crossroads at schoolhouse	33	45	51.6	79	19	12.9	3,870
Road fork	33	46	14.7	79	19	19.3	2,400
Smiths Mill (old site) on Peedee River, 0.4 mile west of, 25 feet north of gate, in northeast corner of county line road; iron post stamped "Prim. Trav. Sta. No. 16 J, 1918"	33	46	37.0	79	19	26.2	2,326
Smiths Mill, in ruins of, about 100 feet west of right bank of Peedee River, an 8-inch iron pipe 2 feet above ground	33	46	42.2	79	19	00.8	2,210
Crossroads	33	46	36.0	79	19	55.8	2,500
Road fork to house	33	46	32.1	79	21	29.9	7,960
Crossroads at house	33	46	29.5	79	22	12.9	3,636
Center of road at house	33	46	30.9	79	22	36.8	2,019
Crossroads	33	46	37.4	79	23	09.5	2,839
Crossroad north of Muddy Creek School	33	46	41.4	79	24	34.9	7,222
Road fork	33	45	53.7	79	25	06.8	5,521
Center of bridge	33	45	49.8	79	25	42.9	3,076
Hemingway, 75 feet south of station, 20 feet east of track, on south side of public-road crossing; iron post stamped "Prim. Trav. Sta. No. 17 J, 1918"	33	45	11.3	79	26	56.1	7,298
Road fork to house	33	45	36.8	79	26	47.5	2,685
Center of bridge	33	46	37.9	79	26	41.8	6,189
Crossroads at store	33	47	02.8	79	26	39.5	2,530
Center of road, opposite flowing well at church and schoolhouse, 150 feet north of church	33	47	16.9	79	26	38.2	1,430
Road fork	33	48	13.7	79	26	33.5	5,750
Crossroads, 0.25 mile east of Johnsonville	33	49	08.8	79	26	31.9	5,579
Crossing on Seaboard Air Line Ry	33	50	02.8	79	26	53.9	5,766
South end of railroad	33	50	18.4	79	26	50.2	1,603
Second-class road crossing	33	50	46.0	79	26	43.1	2,860
Railroad culvert crossing	33	50	56.2	79	26	39.2	1,076
Road crossing	33	51	44.1	79	26	05.8	5,600
Poston, "Prim. Trav. Sta. No. 7 J, 1918" (previously described)	33	52	25.18	79	25	36.66	4,830

Magnetic declination along highways in southwest part of quadrangle, 2° 04′ W.

Northwest along highways to north border of quadrangle (Checked spur line. By Oscar Jones in 1918.)

Station 423, tie point, near Eulonia road fork	33	58	35.1	79	21	10.0	.....
Road fork	33	58	54.7	79	21	43.5	3,444
Eulonia, 32 feet south of southwest corner of depot of Seaboard Air Line Ry., east side of track, north side of public road; iron post stamped "Prim. Trav. Sta. No. 31 J, 1918"	33	59	06.2	79	22	57.2	6,314
Center of culvert	33	59	27.3	79	23	51.3	5,029
Road fork	33	59	55.3	79	24	43.1	5,200

OAKTON QUADRANGLE—Continued.

South along highways through Britton Neck.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossroads, 500 feet northeast of church	33	56	14.7	79	20	38.5	.....
Forks of road	33	55	25.3	79	20	30.5	5,040
Forks of road	33	54	37.7	79	20	22.4	4,860
Forks of road, at Harris Landing	33	53	59.7	79	20	19.1	3,853
Forks of road	33	53	16.8	79	20	17.8	4,331
Forks of road	33	52	36.6	79	20	12.0	4,096
Forks of road	33	51	58.6	79	20	02.9	3,920
Forks of road, in southwest corner of, 400 feet north of graveyard; iron post stamped "Prim. Trav. Sta. No. 32 J, 1918"	33	51	48.8	79	19	51.5	1,380
Center of bridge	33	51	14.3	79	19	51.3	3,491
Center of bridge	33	50	49.6	79	19	39.1	2,700
Center of bridge	33	50	30.6	79	19	10.4	3,089
Center of bridge	33	50	06.4	79	18	49.8	3,006
Center of road, opposite house and old store	33	49	41.0	79	18	27.2	3,200
Forks of road	33	49	14.4	79	18	19.6	2,764
Forks of road, at foot of hill	33	48	20.3	79	17	59.1	5,732
Center of bridge	33	48	14.1	79	18	22.4	2,063
Center of bridge	33	48	02.4	79	18	31.3	1,403
Center of bridge over slough	33	47	11.2	79	18	36.0	5,185
Center of bridge over slough	33	47	02.3	79	18	49.8	1,471
Smiths Mills, Peedee River, east ferry landing	33	46	44.9	79	18	58.6	1,911
Smiths Mills, Peedee River, west ferry landing	33	46	43.6	79	19	01.5	282
Smiths Mills (old site) on Peedee River, 0.4 mile west of, 25 feet north of gate, in northeast corner of county line road; iron post stamped "Prim. Trav. Sta. No. 16 J, 1918"	33	46	37.0	79	19	26.2	2,326

Magnetic declination through Britton Neck, 2° 02′ W.

East along highways near west border of quadrangle.

Center of bridge over deep creek	33	52	58.0	79	29	18.9	.....
Road fork	33	52	53.1	79	27	52.1	7,339
Poston, 1.5 miles west of, crossroads of Poston, Lake City, Johnsonville, and Pamlico roads, 0.75 mile southeast of crossing of Seaboard Air Line Ry	33	52	56.5	79	27	09.4	3,612

Magnetic declination near center of west border of quadrangle, 1° 57′ W.

OKATIE QUADRANGLE.

North along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	32	26	51.3	80	59	57.2	.....
Milepost 36	32	27	30.3	80	59	38.3	4,260
Road crossing	32	28	05.3	80	59	21.3	3,820
Ridgeland station, opposite south end of, 80 feet east of center of track, 150 feet south of main public street crossing railroad, in open ground; iron post stamped "Prim. Trav. Sta. No. 2, 1917 Mac." Azimuth to edge of brick line at southeast corner of brick business block, 250° 31′; azimuth of railroad tangent south, 22° 21′	32	28	51.1	80	58	58.2	5,034
Ridgeland siding	32	29	19.0	80	58	45.6	3,021

Along highways near north border of quadrangle.

Ridgeland, Prim. Trav. Sta. No. 2 (previously described)	32	28	51.1	80	58	58.2	.....
Forks of road	32	29	06.0	80	59	03.9	1,586
Prim. Trav. Sta. No. 2	32	28	51.1	80	58	58.2	.....
Crossroads	32	28	42.0	80	58	40.4	1,785
T road corner, roads north, south, and west (approximately)	32	28	29.7	80	57	45.6	4,851
Road forks	32	28	56.7	80	57	30.1	3,030
Road forks, second-class west	32	29	57.9	80	56	34.9	7,789

OKATIE QUADRANGLE—Continued.

(By H. S. Senseney in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork at "Welcome" sign	32	28	52.2	80	59	28.4	.....
Ridgeland, "Prim. Trav. Sta. No. 2, 1917 Mac" (previously described)	32	28	51.1	80	58	58.2	2,589
Ridgeland, 0.30 mile southeast of, crossroads	32	28	42.0	80	58	40.4	1,780
Ridgeland, 1 mile southeast of, T road north	32	28	10.0	80	58	34.1	3,280
Grahamville, crossroads at	32	28	14.1	80	57	54.6	3,410
Second-class road north	32	28	44.2	80	56	27.2	8,080
Crossroads, temporary bench mark 20.9	32	28	53.6	80	55	52.8	3,097
Crossroads, Elev. 32.7	32	28	15.9	80	55	21.6	4,650
Crossroads, Elev. 12.7	32	28	05.4	80	54	58.6	2,236
Bridge over ditch	32	27	51.8	80	54	28.3	2,941
Along highways through center of quadrangle.							
Road forks. Elev. 18.6	32	27	33.8	80	53	47.7	3,931
North end of bridge	32	27	10.4	80	54	00.1	2,596
Seaboard Air Line Ry., south end of bridge over	32	26	41.5	80	53	46.3	3,148
Crossroads, at store	32	25	43.0	80	53	46.1	5,917
Crossroads	32	25	00.4	80	53	58.2	4,419
Road forks	32	24	25.6	80	54	18.8	3,938
Ridgeland, 8 miles southeast of, 25 feet south and 7 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 5 S, 1918"	32	23	12.3	80	54	28.6	7,460
Small wooden culvert, blazed tree near, on west side of road	32	21	47.1	80	55	07.3	9,220
Road forks	32	21	29.4	80	55	15.6	1,929
T road east through gate (Jasper and Beaufort county line)	32	21	07.8	80	55	25.1	2,330
Road forks	32	20	28.4	80	55	42.3	4,251
T road east	32	20	08.5	80	55	42.4	2,011
Crossroads	32	19	51.5	80	55	43.0	1,711
T road east	32	19	23.0	80	55	59.1	3,194
Okatie post office, opposite, center of road	32	19	13.4	80	56	03.9	1,055
T road east	32	18	31.5	80	56	05.8	4,240
Along highways through center of quadrangle.							
T road northwest	32	18	07.5	80	56	06.5	2,428
Road forks	32	17	26.9	80	56	17.10	4,196
T road south	32	17	20.6	80	55	36.2	3,569
Indian Hill Church, in front of, road forks	32	17	19.4	80	53	45.1	9,543
Road forks	32	17	08.8	80	53	15.8	2,731
Road forks	32	17	01.4	80	52	57.1	1,769
Road forks, gate north	32	16	43.9	80	52	17.6	3,830
Second-class crossroad	32	16	03.3	80	51	37.2	5,375
Road forks	32	15	38.5	80	51	10.3	3,403

Magnetic declination for north border of quadrangle, 0° 07′ E.; for center, 0° 08′ E.; for south border, 0° 16′ E.

OLAR QUADRANGLE.

Northwest along highways in southwest corner of quadrangle. (By H. S. Senseney in 1917–18.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossroads	33	00	16.0	81	12	25.3	2,757
Road forks	33	00	38.1	81	13	02.3	3,870
Road crossing, 105 feet south of milepost 207	33	00	42.0	81	13	40.5	3,272
Sycamore, "Prim. Trav. Sta. No. 84 Mac." (described later)	33	02	12.4	81	13	19.4	9,314

OLAR QUADRANGLE—Continued.

Northeast along Seaboard Air Line Ry. (By E. L. McNair in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	33	00	28.8	81	13	43.4	.....
Road crossing	33	00	41.9	81	13	40.4	1,355
Public-road crossing at milepost 208	33	01	33.9	81	13	28.5	5,350
Road crossing	33	01	48.8	81	13	25.0	1,535
Sycamore station, about 165 feet north of, near road crossing, 22 feet east of center of track; iron post stamped "Prim. Trav. Sta. No. 84, 1917 Mac." Azimuth to switch stand at north end of siding, 190° 16′ 00″; to switch stand at south end of siding, 12° 20′ 00″; to right-hand edge of square post in northwest corner of church tower, 57° 09′ 37″	33	02	12.4	81	13	19.4	2,431
Switch stand at north end of siding	33	02	40.0	81	13	13.3	2,835
Public-road crossing	33	03	24.7	81	13	03.0	4,610
Public-road crossing, at spur	33	04	06.1	81	13	53.5	4,262
Public-road crossing	33	04	57.9	81	12	41.6	5,333
Ulmers station, directly opposite and across track from, 50 feet east of center of track; iron post stamped "Prim. Trav. Sta. No. 86, Mac., 1917." Azimuth to center of tower on schoolhouse, 180° 19′ 45″; to Baptist Church spire, 205° 55′ 30″; of railroad tangent north 3 miles, 191° 00′	33	05	43.0	81	12	30.5	4,653
Road crossing, 70 feet north of milepost 214	33	06	42.5	81	12	17.4	6,113
Pile bridge over creek	33	07	08.3	81	12	11.5	2,660
Salkehatchie River, 730 feet north of milepost 215	33	07	40.1	81	12	04.1	3,270
Schofield station, road crossing 1,400 feet north of	33	08	08.4	81	11	57.6	2,915
Intersection of two long tangents at angle of 5°, 395 feet north of road crossing	33	08	44.2	81	11	49.3	3,690
Milepost 217	33	09	14.8	81	11	39.0	3,220
Road crossing, at signpost marked "Station 1 mile"	33	09	50.8	81	11	26.9	3,780
Road crossing	33	10	06.9	81	11	21.5	1,690
Olar station, at north end of, public-street crossing	33	10	51.8	81	11	06.4	4,720
Second-class road crossing	33	11	22.5	81	10	56.1	3,220
Road crossing	33	12	10.3	81	10	40.0	5,020
Road crossing	33	12	30.8	81	10	33.1	2,150
Road crossing	33	13	07.8	81	10	30.7	3,754
Govan station, opposite and across track from north end of, 27 feet east of center of track, 115 feet south of road crossing; iron post stamped "Prim. Trav. Sta. No. 87, Mac., 1917." Azimuth to crossing signpost, 1,725 feet south, 359° 48′ 55″; to switch stand at south end of siding, 359° 54′ 40″	33	13	24.9	81	10	30.6	1,720
Road crossing	33	13	49.4	81	10	30.1	2,482
Road crossing	33	14	18.5	81	10	13.6	3,257
Road crossing	33	14	36.1	81	10	03.3	1,985

Southeast along Bamberg, Ehrhardt & Walterboro Ry.

Public-road crossing, at spur siding	33	14	51.9	81	02	32.7	.....
Second-class road crossing	33	14	10.4	81	02	24.3	4,251
Second-class road crossing, at switch stand, spur siding	33	13	06.2	81	02	06.3	6,620
Road crossing, at milepost marked "Ehrhardt 8"	33	12	43.0	81	02	00.1	2,400
Public-road crossing, just south of spur siding	33	11	20.7	81	01	35.7	8,581
Public-road crossing	33	10	46.6	81	01	20.9	3,670
Road crossing	33	10	13.2	81	01	10.1	3,493
Intersection of railway tangents	33	09	34.5	81	01	04.7	3,945
Little Salkehatchie River, pile bridge over main channel of	33	09	14.9	81	00	58.5	2,050
Road crossing	33	08	35.0	81	00	54.9	4,047
Intersection of long tangents	33	07	53.2	81	01	07.7	4,355
Road crossing	33	07	27.7	81	01	07.4	2,575
Road crossing	33	06	48.8	81	01	06.8	3,940
Ehrhardt station, 200 feet N. 56° W. from, about 22 feet south of center of main track, 6 feet southeast of fence corner; iron post stamped "Prim. Trav. Sta. No. 90, 1917 Mac." Azimuth to Lutheran Church spire, 49° 43′ 45″	33	05	54.4	81	00	51.7	5,648
Public-road crossing	33	05	47.3	81	00	34.7	1,618

Southeast along highways in north central part of quadrangle. (By H. S. Senseney in 1918.)

Olar station, road crossing at north end of	33	10	51.8	81	11	06.4	.....
Road fork	33	10	17.9	81	10	34.5	4,368
Fence line northeast, at blazed pine tree	33	10	10.5	81	09	46.6	4,147
Crossroads	33	09	59.0	81	09	16.1	2,842
Road forks	33	09	51.1	81	09	03.9	1,305
Road forks	33	09	55.4	81	08	40.9	2,001
Road forks	33	10	02.2	81	08	25.7	1,461

OLAR QUADRANGLE—Continued.

Southeast along highways in north central part of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks	33	10	25.3	81	07	38.0	4,679
Road forks, at road south	33	10	06.0	81	07	00.6	3,725
Road forks	33	09	34.2	81	05	48.6	6,922
Ehrhardt, 6.5 miles northwest of, 0.5 mile south of Colston Branch, 15 feet north and 12 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 14 S, 1918"	33	09	25.1	81	05	43.3	1,021
Road fork	33	09	17.6	81	05	28.3	1,483
Road fork south	33	09	12.3	81	04	55.9	2,812
T road south	33	09	07.7	81	04	26.7	2,521
Crossroads, at mail box 68	33	08	41.0	81	04	29.6	2,718
Road forks	33	08	03.2	81	04	26.8	3,821
Crossroads	33	07	42.7	81	03	49.4	3,798
Crossroads	33	07	20.3	81	03	19.4	3,411
Crossroads	33	07	12.7	81	03	07.0	1,305
Crossroads	33	06	40.8	81	02	14.1	5,535
Center of road, in front of Savannah Creek (colored) Church	33	06	18.1	81	01	36.2	3,955
Ehrhardt, "Prim. Trav. Sta. No. 90, 1917 Mac" (previously described)	33	05	54.4	81	00	51.7	4,479

Southwest along north border of quadrangle.

North end of most northerly of five small bridges	33	14	36.5	81	09	01.8	.....
Second-class crossroads	33	14	16.0	81	09	15.3	2,375
Crossroads	33	13	59.4	81	09	28.6	2,020
Second-class T road east	33	13	33.1	81	09	47.9	3,122
T road west	33	13	16.3	81	09	57.6	1,884
Govan, "Prim. Trav. Sta. No. 87, 1917 Mac" (previously described)	33	13	24.9	81	09	30.6	2,936

Magnetic declination for north central part of quadrangle, 0.3° W.; for north part, 0.2° W.

Southeast along highways through center of quadrangle. (By H. S. Senseney in 1918.)

Rosemary Church, crossroads	33	08	16.3	81	14	50.3	.....
Ulmers, 3 miles northwest of, 2 miles southeast of Big Forks School, 15 feet north of road forks; iron post stamped "Prim. Trav. Sta. No. 12 S, 1918. Elev. 170 feet"	33	07	59.8	81	14	19.3	3,116
Road forks	33	07	23.0	81	13	48.8	4,532
North end of bridge over Wells Branch	33	07	02.6	81	13	39.7	2,203
T road southwest	33	06	43.9	81	13	25.1	2,268
T road southwest	33	06	19.2	81	13	05.3	3,007
Crossroads	33	05	41.3	81	12	48.7	4,078
Ulmers, "Prim. Trav. Sta. No. 86 Mac, 1917"	33	05	43.0	81	12	30.5	1,556

Magnetic declination for center of quadrangle, 0.4° W.

North along highways near west border of quadrangle. (By H. S. Senseney in 1918.)

Road forks at M. J. Delk's mail box	33	11	04.0	81	14	59.3	.....
Junction of five roads	33	11	18.3	81	14	32.2	2,720
Crossroads, mail box in southeast corner	33	11	43.8	81	14	35.9	2,600
Road forks	33	11	58.8	81	14	35.3	1,515
Crossroads	33	12	15.4	81	14	38.9	1,708
Oak Grove School, crossroads west of	33	13	05.9	81	14	48.9	5,176
Fork of road	33	06	30.0	81	00	10.8	.....
Crossroads	33	05	57.0	81	00	20.1	3,427
Ehrhardt, "Prim. Trav. Sta. No. 90, 1917 Mac." (previously described)	33	05	54.4	81	00	51.77	2,707

Magnetic declination for west border of quadrangle, 0.4° W.

ORANGEBURG QUADRANGLE.

Southeast along Southern Ry. (By E. L. McNair in 1918.)

Station.	Latitude			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing at curve	33	17	09.9	80	59	37.0	.....
Midway station, across track from and nearly opposite west end of, 22 feet north of center of track, about 50 feet west of public-road crossing; iron post stamped "Prim. Trav. Sta. No. 1, 1918 Mac." Azimuth to figure 1 on mile post 10, distant 1,100 feet, 100° 58′ 38″	33	17	00.6	80	58	41.2	4,824
Second-class road crossing	33	16	47.0	80	57	55.4	4,130
Road crossing	33	16	29.2	80	56	54.8	5,448
Second-class road crossing	33	16	14.0	80	55	53.7	5,410
Second-class road crossing	33	16	01.3	80	55	02.9	4,500
Milepost 5	33	15	45.5	80	53	57.3	5,795
Embree station, just east of, iron-girder bridge over Edisto River, center of	33	15	37.4	80	53	17.2	3,502
Intersection of tangents at angle of 6° 40′	33	15	35.6	80	52	35.5	3,540
Crossing of narrow-gage railroad	33	15	32.8	80	52	15.9	1,690
Farm-road crossing	33	15	23.7	80	51	12.3	5,480
Milepost 2	33	15	21.0	80	50	53.5	1,615
Road crossing	33	15	09.5	80	49	33.6	6,885
Branchville station, 1,380 feet west of, 27 feet north of center of main track, between main line and Y line, 75 feet west of large pine tree, 103 feet west of post marked "S. A. O. 3"; iron post stamped "Prim. Trav. Sta. No. 2, 1918 Mac." Azimuth to steeple of negro church, 115° 30′ 15″; to negro schoolhouse, 186° 37′ 15″	33	15	06.6	80	49	11.2	1,920
Branchville, main public-street crossing just west of center of main track	33	15	04.2	80	48	57.1	1,222

Along highways near west border of quadrangle. (By Oscar Jones in 1919.)

Copes, 0.75 mile east of, at T road south to Bamberg, on north side of road; iron post stamped "Prim. Trav. Sta. No. 76, 1918. Elev. 168"	33	22	24.7	80	59	52.7	.....
St. George School, 500 feet west of, at road fork, permanent bench mark (probably an iron post). "Elev. 315"	33	28	45.7	80	59	46.9	.....
Road fork	33	28	37.2	80	58	57.1	4,308
Crossroads	33	28	42.7	80	58	31.6	2,238
Crossroads	33	29	02.0	80	58	16.4	2,338
Crossroads	33	29	37.4	80	57	52.8	4,094

Magnetic declination for west border of quadrangle, 0° 12′ W.

From Branchville northeast along public road to Bowman. (By E. L. McNair in 1918.)

Branchville station, 1,380 feet west of, Prim. Trav. Sta. No. 2, 1918 Mac. (previously described)	33	15	06.6	80	49	11.2	.....
Forks of road	33	15	39.0	80	48	14.8	5,805
Forks of road, about 175 feet east of Zion church	33	15	53.6	80	47	57.2	2,101
Forks of road, at mail box	33	16	34.0	80	46	57.6	6,503
Forks of road	33	16	51.8	80	46	34.8	2,643
Small bridge, at forks of road	33	16	56.3	80	45	47.0	4,086
Crossing of Branchville & Bowman R. R.	33	17	00.8	80	45	22.1	2,161
Second-class road	33	17	06.5	80	45	04.9	1,571

From Branchville north along Southern Ry. to Orangeburg.

Public-road crossing	33	15	34.0	80	49	05.9	.....
Road crossing	33	16	08.9	80	49	11.4	3,565
Road crossing	33	16	58.8	80	49	19.4	5,085
Second-class road crossing	33	17	42.4	80	49	26.3	4,450
Road crossing, at Sixty-six flag station	33	18	29.6	80	49	33.8	4,820
Road crossing	33	19	08.3	80	49	40.0	3,941
Road crossing	33	20	00.1	80	49	48.2	5,286
Road crossing	33	20	38.3	80	49	54.3	3,895
Road crossing	33	21	17.7	80	50	00.6	4,024
Road crossing	33	21	35.6	80	50	03.4	1,825
Rowesville station, 550 feet north of, 28 feet east of center of track, 70 feet south of milepost 71; iron post stamped "Prim. Trav. Sta. No. 11, 1918 Mac." Azimuth to Methodist Church steeple, 46° 08′ 15″	33	22	23.22	80	50	10.65	4,853
Public-road crossing	33	22	49.6	80	50	15.2	2,689
Road crossing, at milepost 72	33	23	07.6	80	50	18.0	1,840

ORANGEBURG QUADRANGLE—Continued.

From Branchville north along Southern Ry. to Orangeburg—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	33	23	41.2	80	50	23.4	3,430
Farm-road crossing	33	24	06.4	80	50	27.3	2,570
Road crossing	33	24	56.0	80	50	35.2	5,061
Road crossing	33	25	32.2	80	50	41.0	3,691
Road crossing, at Felder flag station	33	25	57.8	80	50	45.1	2,609
Farm-road crossing	33	26	21.7	80	50	48.8	2,440
Road crossing	33	26	56.4	80	50	54.4	3,545
Road crossing	33	27	21.5	80	50	58.4	2,555
Road crossing	33	27	42.5	80	51	01.7	2,145
Public-road crossing	33	28	27.2	80	51	08.8	4,555
Orangeburg, about 200 feet southwest from crossing of Southern Ry. over the Atlantic Coast Line R. R.; iron post stamped "Prim. Trav. Sta. No. 12, 1918 Mac."	33	29	05.82	80	51	16.16	3,958

Magnetic declination for southeast corner of quadrangle, 0° 16′ W.

Northwest along highway to Midway. (By E. L. McNair in 1918.)

T road southwest	33	15	04.8	80	55	50.1	.....
Private road southwest, 45 feet northwest to two mail boxes	33	15	49.4	80	57	15.8	8,563
Forks of road, driveway to old residence of William Gilmore Simms (the author)	33	16	08.3	80	57	29.0	2,216
Midway; iron post No. 1	33	17	00.6	80	58	41.2	8,097

From Copes northeast along Atlantic Coast Line R. R. to Orangeburg. (By Oscar Jones and E. L. McNair in 1918-19.)

Road crossing	33	23	04.4	80	59	20.2	.....
Road crossing, on Orangeburg and Cameron road	33	23	10.8	80	59	02.7	1,621
Road crossing	33	23	53.1	80	57	48.5	7,600
Road crossing	33	24	11.8	80	57	26.2	2,670
Road crossing	33	24	25.1	80	57	10.3	1,910
Road crossing	33	24	58.7	80	56	30.2	4,800
Road crossing	33	25	23.2	80	56	01.0	3,500
Road crossing	33	25	55.2	80	55	22.7	4,590
Cordova, tie point	33	26	08.01	80	55	07.47	1,826
Road crossing	33	26	46.0	80	54	22.2	5,428
Road crossing, near intersection of tangents	33	27	11.9	80	53	51.4	3,695
Public-road crossing	33	28	04.6	80	53	02.4	6,753
Center of span across Edisto River	33	28	30.4	80	52	24.9	4,108
Orangeburg Prim. Trav. Sta. No. 12 (previously described)	33	29	05.82	80	51	16.16	6,839

From Rowesville west along highway to Copes. (By Oscar Jones in 1919.)

Rowesville, Prim. Trav. Sta. No. 11, 1918 Mac. (previously described)	33	22	23.22	80	50	10.65	.....
Center of bridge	33	22	15.2	80	51	02.5	4,472
Center of bridge	33	21	28.7	80	51	47.5	6,048
T road northeast	33	21	08.4	80	52	50.3	5,709
West end of bridge over North Fork of Edisto River	33	21	19.9	80	53	14.3	2,347
Road fork	33	21	20.2	80	53	54.3	3,388
Road fork, at Bethlehem Church	33	20	51.3	80	54	56.9	6,058
Center of small culvert	33	20	10.5	80	55	55.6	6,461
Canaan Church, 1,000 feet southwest of, in southwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 75 J, 1919"	33	19	39.5	80	56	30.8	4,326
Center of culvert, 100 feet west of house	33	20	30.6	80	57	02.3	5,824
Road fork	33	21	09.2	80	57	26.4	4,402
T road north	33	21	26.4	80	57	57.1	3,139
Road fork	33	21	59.0	80	58	52.1	5,707
Road fork	33	22	25.2	80	59	31.8	4,282
Copes, 0.75 mile east of, Prim. Trav. Sta. No. 76 (previously described)	33	22	24.73	80	59	52.68	1,773

Magnetic declination for quadrangle, 0° 21′ E.

ORANGEBURG QUADRANGLE—Continued.

Northwest along public road in northwest corner of quadrangle. (By Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing (McNair)	33	28	04.59	80	53	02.39	.....
Road fork at gin	33	28	52.4	80	52	50.6	4,936
Road fork	33	28	52.0	80	53	25.5	2,957
Orangeburg, 3 miles west of, at road fork, 20 feet west of granite monument marked "This road connecting Orangeburg with Ninety-six was laid out in 1770. Eutaw Chapter D. A. R." "U. S. P. B. Elev. 229" on post	33	28	47.3	80	54	13.6	4,095
Center of culvert, at road forks	33	28	49.3	80	54	36.9	1,976
Road forks	33	29	29.6	80	55	36.1	6,455
Center of bridge over Spring Branch	33	29	47.7	80	55	58.9	2,660

From Orangeburg southeast along public road in northeast corner of quadrangle to Bowman.

Orangeburg, Prim. Trav. Sta. No. 12 (previously described)	33	29	05.82	80	51	16.16	.....
Granite monument with tablet, marking Orangeburg and Charleston road, established 1737	33	28	19.2	80	50	54.6	5,053
T road southwest	33	27	48.6	80	50	16.4	4,483
Road fork	33	27	27.3	80	49	35.0	4,119
Road fork	33	27	09.0	80	48	59.6	3,530
Road fork at gin	33	26	45.6	80	48	14.6	4,489
Road fork	33	26	32.2	80	47	50.1	2,483
Road fork	33	26	02.1	80	47	13.9	4,320
Center of bridge	33	25	44.6	80	46	46.2	2,943
Orangeburg, 7 miles southeast of, on Orangeburg and Charleston road, 150 feet northeast of crossroads to Rowesville, at southwest corner of church; bench-mark post, U. S. Experiment Station, Drainage. Elev. 172.1	33	25	19.8	80	45	26.6	7,201

From drainage station southeast along public road to Rowesville in northeast corner of quadrangle.

Bench-mark post, U. S. Experiment station	33	25	19.75	80	45	26.63	.....
Road fork	33	24	43.6	80	46	19.1	5,757
Center of bridge	33	24	30.1	80	46	42.6	2,420
Road fork	33	24	10.8	80	47	24.2	4,024
Road fork	33	23	14.8	80	48	10.2	6,878
Road fork	33	23	01.3	80	48	44.3	3,197
Road fork	33	22	40.6	80	49	18.1	3,553
Rowesville Prim. Trav. Sta. No. 11 Mac., 1918 (previously described)	33	22	23.22	80	50	10.65	4,786

Magnetic declination for northeast corner of quadrangle, 27′ W.

Southeast along Atlantic Coast Line R. R. in northeast corner of quadrangle. (By Oscar Jones in 1919.)

Road crossing	33	29	42.4	80	50	11.3	.....
Road crossing	33	29	23.8	80	50	44.6	3,390
Orangeburg primary traverse post No. 12 (previously described)	33	29	05.82	80	51	16.16	3,228

Northeast along public road in northeast corner of quadrangle. (By Oscar Jones in 1919.)

Bench-mark post (previously described)	33	25	19.75	80	45	26.63	.....
Road fork	33	26	06.8	80	45	08.6	4,993
Bend in road, opposite house at sawmill	33	26	59.1	80	45	35.5	5,752
Center of small bridge over ditch, 200 feet north of sawdust pile	33	27	03.0	80	45	35.6	402
Road fork	33	27	37.3	80	45	34.6	3,460

Northwest across northeast corner of quadrangle.

Road fork	33	29	11.2	80	45	23.8	.....
Road fork	33	29	03.2	80	46	19.4	4,781
Road fork	33	29	15.7	80	46	51.0	2,964
Road fork	33	29	25.8	80	47	12.9	2,116
Center of bridge, at road fork	33	29	58.0	80	47	59.5	5,120

Magnetic declination for northeast corner of quadrangle, 15′ E.

ORANGEBURG QUADRANGLE—Continued.

From Orangeburg north along public road to post 79. (By Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Orangeburg, "Prim. Trav. Sta. No. 12" (previously described).	33	29	05.82	80	51	16.16	.....
Orangeburg depot, on Southern Ry., opposite semaphore, center of track	33	29	36.3	80	51	19.8	3,098
Crossroads	33	29	47.4	80	51	48.5	.....
Road fork	33	29	58.9	80	52	15.6	2,572

PARKSVILLE QUADRANGLE.

Along highways near south border of quadrangle. (By B. H. Yoakum in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
J. A. Hamilton's store, on Scott's Ferry road, 120 feet west of, T road south	33	45	34.0	82	02	40.1	.....
Frank West's store, on Scott's Ferry road, crossroads at	33	45	20.2	82	03	11.6	3,000
Prescott's store, opposite southeast corner of, center of main road	33	45	20.0	82	04	18.6	5,666

Magnetic declination along south border of quadrangle, 0° 42′ E.

Near southeast corner of quadrangle. (By Oscar Jones in 1919.)

Edgefield, 5 miles southwest of, on Parksville road, at road forks, north side of road, 5 feet north of J. F. Talbert's mail box; iron post stamped "Prim. Trav. Sta. No. 92 J, 1919"	33	47	30.8	82	00	12.9	2,080

South near east border of quadrangle. (By E. L. McNair in 1919.)

Center of creek, at road crossing, no bridge, on Saluda and Greenwood county line	33	58	26.1	82	00	11.7	.....
Crossroads, near negro church, 0.5 mile south of Ougst's store	33	58	33.9	82	00	35.9	2,183
T road easterly, at oak tree	33	57	36.5	82	00	45.8	5,861
Center of bridge over Big Mountain Creek, 70 feet south from road forks	33	56	58.5	82	01	00.8	4,037
Forks of road, at Williams's store	33	56	44.6	82	00	41.2	2,172
Forks of road	33	56	05.0	82	00	28.7	4,136
Forks of road	33	55	47.1	82	00	31.9	1,832
Forks of road	33	55	15.7	82	00	25.8	3,215
Creek crossing, no bridge	33	54	41.3	82	00	14.3	3,611
Pleasant Lane post office, 110 feet north of Timmerman's store, 35 feet west of center of road, 2 feet southeast of electric-light pole; iron post stamped "Prim. Trav. Sta. No. 7, 1919 Mac." Azimuth to north edge of chimney on north end of Mr. Timmerman's house, 217° 05′ 00″	33	54	07.8	82	00	01.4	3,557
Center of middle span of iron bridge across Turkey Creek	33	53	28.1	82	00	06.8	4,036
Edgefield, 5 miles southwest of, Prim. Trav. Sta. No. 92 (previously described)	33	47	30.8	82	00	12.9	.....

Magnetic declination along east edge of quadrangle, 00° 13′ W.

PEEPLES QUADRANGLE.

Northwest along Charleston & Western Carolina Ry. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Trestle over creek	32	58	23.0	81	15	26.9	.....
Road crossing	32	58	54.1	81	16	11.7	4,945
Milepost 55	32	59	15.9	81	16	43.2	3,475
Public-road crossing	32	59	55.6	81	17	40.6	6,320

PEEPLES QUADRANGLE—Continued.

West along highways near south edge of quadrangle. (By H. S. Senseney in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Estill Prim. Trav. Sta. No. 78, 1917 Mac (Varnville quadrangle)	32 45 16.1	81 14 29.6	.....
T road south at sawmill	32 45 14.0	81 15 02.1	2,785
Crossroads	32 45 16.2	81 16 14.8	6,213
Road forks	32 45 16.7	81 17 03.3	4,140
Road forks	32 45 15.1	81 17 25.9	1,939
Second-class road north	32 45 13.5	81 18 56.4	7,732
Crossroads	32 45 26.6	81 19 53.3	5,036
Road fork	32 45 46.9	81 20 24.4	3,359
Road fork	32 45 18.4	81 20 31.2	2,930
T road east	32 45 08.3	81 20 34.6	1,061
Road fork	32 45 02.5	81 20 39.1	707

Magnetic declination for south border of quadrangle, 0.3° E.

North along east side of Savannah River.

South end of more southern of two small bridges	32 45 19.2	81 22 02.8	.....
T road east, at blazed tree	32 45 42.0	81 22 05.0	2,306
Crossroads	32 46 05.8	81 22 06.6	2,415
Springfield Church, 0.25 mile north of, crossroads	32 46 42.6	81 22 13.9	3,765
T road east	32 47 17.5	81 22 30.6	3,810
Second-class T road east	32 47 45.9	81 22 54.8	3,530
Crossroads, at small wooden bridge	32 48 05.8	81 23 06.4	2,245
T road west	32 48 18.6	81 23 12.1	1,380
T road east	32 48 27.3	81 23 16.2	950
Crossroads	32 48 56.0	81 23 30.2	3,130
Road forks	32 49 34.6	81 23 35.0	3,925
St. Matthews Church, crossroads in front of	32 49 56.7	81 23 39.3	2,263
South end of wooden culvert	32 50 20.6	81 23 58.2	2,910
Ruddell, 220 feet east of S. Pender's store, on south side of road, at road forks; iron post stamped "Prim. Trav. Sta. No. 8 S, 1918." Azimuth to head of nail in blaze on pine tree, 520 feet distant, 157° 30′ 05″	32 50 54.2	81 24 27.9	4,236

East through center of quadrangle.

Road fork	32 50 50.7	81 23 50.3	3,229
T road south at mail box	32 51 06.9	81 23 01.8	4,449
T road north	32 51 12.7	81 22 20.2	3,603
Road fork	32 51 11.8	81 21 59.0	1,800
King Creek School, north of well and blazed tree, center of road	32 51 11.6	81 21 29.3	2,526
Road forks	32 51 05.6	81 20 43.5	3,962
Road forks	32 51 13.4	81 20 32.3	1,241
Road forks	32 51 30.9	81 19 59.7	3,298
Road forks	32 51 36.3	81 19 24.4	3,054
Road forks, at C. D. Smart's mail box 40	32 51 51.9	81 18 35.3	4,477
T road north	32 52 15.0	81 17 39.8	5,275
Road fork, at blazed tree	32 52 14.3	81 17 35.9	341
Crossroads	32 52 46.6	81 16 29.3	6,544
Railroad crossing	32 52 47.8	81 16 26.0	310
Emanuel Church, crossroads	32 52 55.4	81 16 03.7	2,047
Road forks	32 52 17.6	81 15 21.4	5,249

West along north border of quadrangle.

T road south	32 59 52.8	81 20 45.8	.....
Second-class road north	32 59 39.1	81 21 30.5	4,050
Crossroads	32 59 26.6	81 21 37.9	1,410
Road forks	32 59 49.6	81 22 13.8	3,832

Magnetic declination for east side of quadrangle 0.0° W.; for center, 0.0° W.

PEEPLES QUADRANGLE—Continued.

South along highways near west border of quadrangle. (By H. S. Senseney in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork	32	59	59.3	81	28	27.5	
Crossroads	32	59	32.7	81	28	12.4	2,981
Crossroads, at gate west	32	59	09.6	81	28	04.1	2,437
T road east, at blazed pine tree	32	58	39.3	81	27	44.4	3,492
Road fork	32	58	15.0	81	27	42.2	2,463
Road fork	32	57	44.7	81	27	42.8	3,063
Road fork, south of creek	32	57	27.5	81	27	47.4	1,788
Crossroads	32	56	51.4	81	27	22.1	4,231
Crossroads, at telephone line	32	56	33.8	81	27	05.1	2,298
Crossroads	32	56	14.8	81	26	56.9	2,048
Road fork	32	55	32.2	81	26	30.9	4,844
T road north through gate	32	55	20.6	81	26	18.9	1,559
T road west	32	55	24.9	81	25	32.8	3,951
Road fork	32	54	35.8	81	25	20.7	5,068
Old crossroads, at blazed oak tree	32	54	06.2	81	25	49.6	3,879
Road fork, 130 feet south of bridge, near negro schoolhouse	32	53	24.9	81	25	47.1	4,182
Crossroads	32	52	54.1	81	25	41.7	3,139
Center of road, in front of triangular blaze on pine tree	32	51	35.6	81	25	05.7	8,511
Crossroads	32	51	11.5	81	24	50.8	2,750
Hampton and Barnwell county line, fence corner	32	50	59.6	81	24	45.3	1,292
Road fork	32	50	48.1	81	24	38.4	1,300
Ruddell, Prim. Trav. Sta. No. 8 (previously described)	32	50	54.2	81	24	27.9	1,083
East end of bridge	32	50	28.2	81	25	12.3	4,640
Cohens Bluff, Army bench mark No. 26 (on checked spur line). Azimuth to triangle blaze on pine tree, 95° 20′ 50″	32	50	27.4	81	25	32.0	1,682

PINELAND QUADRANGLE.

North along highways near east border of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks	32	32	08.7	81	00	51.5	
Angle in road, on center line of both sides	32	33	55.8	81	01	01.8	10,858
Byroad west, about 75 feet north of church	32	34	58.3	81	00	17.6	7,363
Gillisonville Public School building, 280 feet S. 74° 27′ E. from flagstaff on tower, 55 feet N. 28° W. from corner post at southeast corner of schoolhouse yard, 10 feet east of fence line; iron post stamped "Prim. Trav. Sta. No. 29, 1917 Mac."	32	36	37.0	81	00	01.2	
Second-class T road west at fence corner	32	37	41.2	81	00	00.8	
Road forks, right-hand road to Possum Creek	32	38	39.8	81	00	13.6	6,025
Crossroads	32	38	51.3	81	00	16.9	1,201
Center of bridge, at crossing of creek	32	39	24.0	81	00	38.2	3,772
Grays, 35 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 30, 1917 Mac."	32	40	23.0	81	01	13.4	6,672
Bridge over creek	32	40	43.5	81	00	20.4	4,990

South along Seaboard Air Line Ry.

Milepost 188	32	44	17.0	81	14	31.5	
Second-class road crossing	32	43	55.5	81	14	32.0	2,165
Public-road crossing	32	43	32.4	81	14	32.5	2,335
Road crossing	32	42	49.4	81	14	33.5	4,355
Public-road crossing	32	41	25.1	81	14	35.4	8,520
Scotia station, public-road crossing	32	40	49.3	81	14	36.3	3,615
Second-class road crossing	32	39	48.4	81	14	37.7	6,155
Road crossing	32	39	20.8	81	14	38.4	2,800
Second-class road crossing	32	38	25.2	81	14	39.7	5,615
Road crossing	32	37	12.0	81	14	41.4	7,405
Public-road crossing	32	36	36.5	81	14	42.3	3,585
Garnett station, directly opposite south end of, 100 feet south of public-road crossing, 28 feet east of center of track, 85 feet north of water tank; iron post stamped "Prim. Trav. Sta. No. 79 1917 Mac." Azimuth to north end of switch stand, 180° 27′	32	36	21.0	81	14	42.3	1,569
Public-road crossing	32	35	45.7	81	14	46.0	3,574
Switch stand at sawmill spur	32	35	02.3	81	14	52.2	4,425

Only one observation for magnetic declination, 0° 0.5′ E.

PINELAND QUADRANGLE—Continued.

West near north border of quadrangle. (By H. S. Senseney in 1917-18.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Horse Gall, T road east at	32	44	37.4	81	02	36.6	
Road forks	32	44	37.5	81	02	44.0	629
Road forks	32	43	54.0	81	02	56.4	4,530
Crossroads, blazed pine tree north	32	43	48.1	81	03	03.1	822
Bend in road, at J. R. Peeples's mail box	32	43	40.7	81	03	46.4	3,774
Road forks at small cabin	32	43	48.6	81	04	16.8	2,715
Gate	32	43	20.4	81	04	50.7	4,061
Nixville, 4 miles southeast of, 1.5 miles east of Mount Carmel, 20 feet south and 10 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 3 S, 1917". Azimuth to peak of roof of house east of road, 315 feet distant, 224° 39′ 30″	32	42	48.5	81	05	15.5	3,859
Road forks	32	43	05.9	81	05	53.1	3,659
Mount Carmel Church, T road at	32	43	28.4	81	07	15.8	7,425
Road forks	32	43	56.4	81	08	05.4	5,092
T road west near Smith's store	32	44	06.7	81	08	18.9	1,554
Nixville, crossroads at	32	44	32.0	81	09	05.7	4,747
Nixville School, T road south at	32	44	39.4	81	09	58.6	4,576
Crossroads	32	44	52.1	81	11	09.9	6,228

Magnetic declination along north border of quadrangle, 0.1° E.

East along highways through center of quadrangle. (By H. S. Senseney in 1918.)

Garnett, Prim. Trav. Sta. No. 79, 1917 Mac. (previously described)	32	36	21.0	81	14	42.3	
Road forks	32	36	29.5	81	14	01.5	3,594
Road forks	32	36	20.2	81	13	45.3	1,680
Hampton and Jasper county line	32	36	14.0	81	13	22.0	2,095
Crossroads at blazed pine tree	32	35	48.1	81	13	05.4	2,975
Road fork	32	35	36.1	81	12	57.7	1,385
Road fork	32	35	32.0	81	12	28.0	2,567
Road fork, at eastern of three mail boxes	32	35	11.2	81	11	54.7	3,547
T road south, in front of Richardson's store	32	35	11.0	81	11	49.2	472
Road fork	32	35	22.6	81	11	22.1	2,602
Road fork	32	35	39.7	81	11	05.8	2,215
T road south at store	32	36	18.6	81	09	46.7	7,826
Pineland station, about 0.25 mile north of, railroad crossing	32	36	24.5	81	09	34.9	1,165
Road fork	32	36	39.5	81	09	04.5	3,010
Pineland, 2 miles east of, 15 feet south and 15 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 25, 1918"	32	37	13.0	81	07	54.2	6,898
Road fork	32	37	46.5	81	06	45.5	6,781
T road south at blazed pine tree	32	37	33.3	81	05	38.1	5,916
Crossroads	32	37	11.5	81	04	07.5	8,054
Road fork south	32	37	00.8	81	03	27.3	3,602
Crossroads	32	36	48.5	81	02	30.3	5,036
Road fork, west of negro cabin	32	36	37.2	81	01	42.0	4,290
Lane south through gate to house	32	36	24.9	81	00	49.0	4,694
Crossroads, three blazed pine trees at southeast corner	32	36	20.4	81	00	29.7	1,720
Gillisonville, "Prim. Trav. Sta. No. 29, 1917 Mac." (previously described)	32	36	37.0	81	00	01.2	2,954

East along highways near south border of quadrangle.

Road fork, at telephone pole No. 16345	32	32	21.9	81	14	44.5	
At telephone pole No. 16360	32	32	08.0	81	14	30.0	1,867
At telephone pole No. 16390	32	31	34.7	81	14	02.9	4,085
At telephone pole No. 16414	32	31	05.7	81	13	49.6	3,150
Center of road, under telephone pole	32	30	55.3	81	13	48.4	1,050
Center of road, opposite blazed pine tree	32	30	52.6	81	13	29.2	1,664
Center of road, opposite blazed oak tree	32	30	39.7	81	13	04.0	2,523

Magnetic declination for center of quadrangle, 0.1° E.; for south border, 0.1° E.

PROSPERITY QUADRANGLE.

West near south border of quadrangle. (By E. L. McNair in 1919.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Forks of road	34 00 41.2	81 31 03.4	.....
Steeple of Mount Hebron Church	34 01 05.7	81 31 18.3	.....
Crossroads, at milepost 8 to Batesburg	34 01 34.8	81 31 54.0	3,977
T road corner	34 01 40.1	81 31 59.5	708
Forks of road	34 01 20.9	81 33 05.5	5,883
Crossroad, in front of house and near small store	34 01 21.6	81 33 25.7	1,695
Center of bridge over Cloud's Creek	34 01 18.7	81 33 48.6	1,954
Forks of road, 10 feet northwest of intersection of wheel tracks	34 01 07.5	81 34 36.7	4,206
Crossroads	34 01 15.8	81 34 39.7	877
Forks of road	34 00 51.5	81 35 04.7	3,237
Cupola of Fairview School	34 00 36.1	81 35 34.5	2,955
T road N. 30° W.	34 00 22.1	81 35 58.5	2,464
T road southeast, in front of house	34 00 12.1	81 36 13.5	1,616
Batesburg, about 9 miles northwest from, about 1 mile southwest of Fairview School, 800 feet southwest of T road corners, 10 feet southeast of center of road, at edge of field; iron post stamped "Prim. Trav. Sta. No. 3, 1919 Mac."	34 00 07.7	81 36 21.3	791
Center of creek	34 00 15.5	81 44 08.2	.....
Center of bridge over Saluda River	34 00 32.2	81 44 29.6	2,467

Magnetic declination along south edge of quadrangle, 00° 05′ W.

From post 1 to Lexington. (By R. B. Steele and Oscar Jones in 1919.)

'Prim. Trav. Sta. No. 1, 1919 Mac." (previously described)	34 00 16.11	81 30 53.47	.....
T road west	34 01 02.0	81 30 26.7	5,156

RAVENELS QUADRANGLE (Northeast quarter is Ladson 7½′ quadrangle, southeast quarter is John s Island 7½′ quadrangle).

Along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Switch stand at turnout	32 45 49.1	80 14 50.7	.....
Ravenel station, 65 feet N. 80° W. from northwest corner of station platform, 70 feet north of center of main track, 70 feet north and 50 feet west of public-road crossing; iron post stamped "Prim. Trav. Sta. No. 12, 1917 Mac." Azimuth of long railroad tangent west, 82° 36′ 30″	32 45 52.6	80 14 25.8	2,151
Ravenel, station 213	32 45 52.6	80 14 18.4	627

Northeast along Atlantic Coast Line R. R.

Ravenel siding, switchstand at east end of	32 45 57.0	80 13 37.9	3,485
Road crossing	32 46 00.6	80 13 05.0	2,835
Milepost marked "Chn. 22"	32 46 09.7	80 11 41.9	7,155
Berry Hill siding, switch stand at west end of	32 46 19.1	80 11 00.5	3,659
Road crossing	32 46 29.9	80 10 20.7	3,565
Milepost marked "Chn. 20"	32 46 40.1	80 09 43.4	2,344

Northwest and north along Atlantic C oast Line R. R.

The Farms flag station, public-road crossing at	32 53 59.0	80 00 42.5	.....
Saxon flag station, road crossing at	32 55 06.6	80 01 18.7	7,495
Otranto station, 165 feet south of public-road crossing, 25 feet east of center of north-bound track, 1 foot from telegraph pole; iron post stamped "Prim. Trav. Sta. No. 16, 1917 Mac." Azimuth of railroad tangent north from station, 185° 45′	32 57 52.4	80 02 31.2	17,861
Public-road crossing	32 58 29.4	80 02 27.1	3,760
Public-road crossing	32 59 43.2	80 02 18.2	7,495

RAVENELS QUADRANGLE—Continued.

South along railroad near east border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Second-class road crossing	32 59 49.0	80 00 04.3	.....
Second-class road crossing	32 58 34.5	80 00 11.2	7,550
Road-crossing	32 58 04.8	80 00 06.6	3,025
Second-class road crossing	32 57 33.8	80 00 01.9	3,165

Northeast along Atlantic Coast Line R. R.

Rantowles flag station, road crossing at	32 46 52.2	80 08 59.1	3,980
Rantowles River, center of draw span over	32 47 11.2	80 07 49.3	6,255
John's siding, switchstand at west end of	32 47 27.4	80 06 49.8	5,340
Johns Island station, 90 feet east of semaphore post, at mail crane, between ends of ties supporting crane, 10 feet north of center of track; iron post stamped "Prim. Trav. Sta. No. 14, 1917 Mac."	32 47 35.7	80 06 25.6	2,223
Road crossing	32 48 02.6	80 05 53.6	3,855
Farm-road crossing	32 48 54.5	80 05 00.2	6,945
Road crossing	32 50 32.6	80 03 19.4	13,134
Ashley River, center of swing span over	32 50 50.0	80 03 01.6	2,319
Road crossing	32 51 15.6	80 01 52.5	6,435
Road crossing	32 51 23.9	80 01 23.9	2,580

Along Seaboard Air Line Ry. near south border of quadrangle. (By E. L. McNair in 1917.)

Private-road crossing	32 45 06.6	80 08 50.1	.....
Second Stono River bridge, center of draw span	32 45 05.6	80 08 10.6	3,370
Public-road crossing	32 45 24.9	80 07 04.7	5,962
Johns Island siding on Seaboard Air Line Ry., near center of, 15 feet north and 10 feet west of crossing of Johns Island and Rockville road, 2 feet south of crossing signpost; iron post stamped "Prim. Trav. Sta. No. 49, 1917 Mac."	32 45 40.8	80 06 24.1	3,825
Johns Island siding on Seaboard Air Line Ry.; switch stand at north end	32 45 52.6	80 05 52.9	2,919
Center of bridge over tidewater creek	32 46 06.6	80 05 16.5	3,415
Public-road crossing	32 46 17.3	80 04 48.8	2,605
Stono River bridge, center of draw span	32 46 26.6	80 04 24.7	2,260
Center of creek crossing	32 46 53.7	80 03 14.4	6,595
Road crossing	32 47 02.1	80 02 51.5	2,132
Private-road crossing	32 47 09.6	80 02 07.2	3,859
Crossing of Atlantic Coast Line R. R. branch line and Seaboard Air Line Ry	32 47 12.7	80 01 48.7	1,610
Main public-road crossing	32 47 17.6	80 01 19.0	2,590
Road forks, south of Seaboard Air Line Ry	32 47 06.4	80 00 14.7	5,600

Magnetic declination along south border of quadrangle, 1.0° west.

From Johns Island siding on Seaboard Air Line Ry. north along highway to Johns Island station on Atlantic Coast Line R. R.

T road south, about 200 feet west of T road north at store	32 46 41.8	80 06 24.4	.....
Johns Island, draw span of highway bridge to island	32 47 08.2	80 06 24.8	2,673
Johns Island station on Atlantic Coast Line R. R.; Prim. Trav. Sta. No. 14 (previously described)	32 47 35.7	80 06 25.6	2,788

Northwest along highways near west border of quadrangle. (By E. L. McNair in 1917.)

Ravenel, Prim. Trav. Sta. No. 12 (previously described)	32 45 52.6	80 14 25.8	.....
Forks of road	32 46 24.6	80 14 43.2	3,566

North along highways near west border of quadrangle.

Forks of road	32 55 13.6	80 14 04.8	.....
Angle in road, 2 wire nails in root of blazed 20-inch hickory tree at northwest corner of road	32 55 36.3	80 13 42.0	3,063
Third-class road south	32 56 11.1	80 12 58.0	5,147
Bacon's bridge crossroads	32 56 53.6	80 12 19.6	5,396

RAVENELS QUADRANGLE—Continued.

South along highways near center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossing of tramroad bed, angle of 15°	32	56	21.7	80	11	01.0	7,440
Crossroads	32	56	02.8	80	10	37.6	2,760
Crossroads	32	55	21.7	80	09	46.9	5,991
Tramroad crossing, wooden rails	32	54	59.4	80	09	23.6	3,009
Bridge over creek	32	54	33.9	80	08	57.3	3,419
Center of road, opposite milestone C7, S10	32	54	09.3	80	08	40.1	2,880
Summerville, road to Charleston via Drayton, 1,550 feet southeast of milestone C7, S10, on southwest side of road, opposite gateway in brick wall, at entrance to Middleton place; iron post stamped "Prim. Trav. Sta. No. 48, 1917 Mac"	32	53	58.4	80	08	27.3	1,556
Angle of 27° in road, center line both ways	32	53	24.2	80	07	41.4	5,221
Crossing of new tramroad	32	53	14.6	80	06	59.3	3,714
T road south 27° west	32	53	09.4	80	06	47.7	1,125
Forks of road	32	52	46.4	80	06	59.9	2,548
Forks of road	32	52	05.5	80	07	22.2	4,548
Crossing of old abandoned tramroad	32	51	25.6	80	07	38.6	4,261
Crossing of railroad from mill to phosphate mine	32	50	16.0	80	07	32.9	7,053
Small bridge, 150 feet north of angle in road	32	49	40.0	80	07	38.6	3,676
T road west	32	49	29.6	80	07	35.2	1,086
Forks of road, near church, 60 feet north of separation of wagon tracks	32	48	49.4	80	07	18.0	4,321
T road N. 23° W.	32	48	18.6	80	07	03.7	3,344
Crossroads, crossing of Savannah and Charleston road	32	48	07.1	80	06	32.7	2,889
Johns Island, iron bench-mark post No. 14 (previously described)	32	47	35.7	80	06	25.6	3,232

Magnetic declination in center of quadrangle, 0.8° W.

South along highways. (By E. L. McNair in 1917.)

Iron post stamped "Prim. Trav. Sta. No. 49" (described above)	32	45	40.8	80	06	24.1	.....
T road west	32	45	18.3	80	06	23.4	2,270

Northwest along Dorchester Road. (By E. L. McNair in 1917.)

Intersection of Atlantic Coast Line R. R. and Dorchester Road	32	51	15.6	80	01	52.5	.....
Forks of road	32	51	16.7	80	02	29.3	3,139
Creek bridge	32	52	09.8	80	03	17.3	6,755
Railroad crossing	32	52	33.2	80	03	38.2	2,954
Railroad crossing	32	52	48.1	80	03	52.0	1,915
T road west	32	53	12.1	80	04	03.9	2,684
Berkeley and Charleston county line, center of road	32	53	23.4	80	04	11.3	1,189
Second-class crossroad	32	54	02.7	80	04	38.2	4,593
Creek bridge	32	54	08.6	80	04	48.6	1,068
Crossroads, road southwest closed by fence	32	54	22.7	80	05	33.3	4,060
Crossroads	32	54	49.8	80	06	27.9	5,403
Small creek	32	55	09.7	80	07	00.6	3,435
T road southwest	32	55	31.1	80	07	34.6	3,614
Opposite gate between two live-oak trees	32	56	08.9	80	08	35.0	6,408
Center of bridge over Eagle Creek, a navigable stream below bridge	32	57	01.6	80	09	32.6	7,251
Forks of road, 600 feet east of bridge over Dorchester Creek	32	57	04.7	80	09	52.8	1,749
Summerville, 6.7 miles southwest of, on Dorchester road, at angle in road where it turns from S. 78° W. to N. 38° 30′ W., in line with road northwest, about 20 feet south of center of road, 10 feet north of gate entering field, near telephone pole 900, an old burying ground in woods about 50 feet west; iron post stamped "Prim. Trav. Sta. No. 54, 1917 Mac."	32	56	57.2	80	10	12.7	1,854
Forks of road	32	57	32.9	80	11	01.2	5,481
Crossroads southwest to Bacon's bridge	32	58	03.8	80	12	04.3	6,225
Bacon's bridge over Ashley River, center of stream	32	57	30.5	80	12	04.5	3,356
Bacon's bridge crossroads (previously described)	32	56	53.6	80	12	19.7	3,935

Magnetic declination for quadrangle, 0.8° W.

RAVENELS QUADRANGLE—Continued.

Northwest along highways.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. No. 14, Johns Island (previously described)	32	47	35.7	80	06	25.6	
Switch stand at spur turnout from main line, Atlantic Coast Line	32	47	20.8	80	07	14.0	4,397
Crossing of Savannah and Charleston public road and spur track of Atlantic Coast Line R. R. to phosphate mills	32	47	55.8	80	07	44.8	4,402
Center of bridge over Rantowles Creek	32	47	44.8	80	08	05.3	2,067
Forks of road	32	47	46.4	80	08	33.9	2,449
T road west	32	48	22.1	80	09	12.5	4,884
Forks of road	32	49	05.6	80	09	30.7	4,660
Forks of road	32	49	20.8	80	10	40.3	6,130
Forks of road at road through gate	32	49	33.5	80	11	38.8	5,155
T road south	32	49	42.6	80	12	21.4	3,745
Center of road, opposite church on north side	32	50	01.0	80	13	45.8	7,440
Delemar Crossroads, 4 miles east of, west of church, 105 feet S. 60° E. of crossing of log tramroad, 15 feet south of center of county-line road; iron post stamped "Prim. Trav. Sta. No. 73, 1917 Mac."	32	50	10.1	80	14	29.9	3,875

Northwest along highways to Seaboard Air Line Ry.

Road northeast to boat landing, at telephone line	32	45	15.3	80	02	53.8	
Angle of 17° in road, on center line both ways	32	45	49.8	80	03	42.5	5,430
T road east	32	46	02.6	80	04	15.2	3,075
Road crossing on Seaboard Air Line Ry	32	46	17.3	80	04	48.8	3,224

Magnetic declination for northwest part of quadrangle, 0.8° W.

East along highways near north border of quadrangle.

Angle of 12° in road, crossing of long tangents	32	58	14.0	80	12	39.5	
Forks in road	32	58	12.3	80	12	33.7	520
Crossroads	32	58	03.8	80	12	04.3	2,645
Forks of road	32	59	30.3	80	11	21.2	9,480
Forks of road	32	59	47.1	80	10	54.2	2,864
Ladson station, public-road crossing at	32	59	07.7	80	06	36.5	
Forks of road	32	59	16.7	80	05	53.7	3,760
Center of bridge with railing over small creek	32	59	33.3	80	05	08.5	4,195
Forks of road	32	59	49.4	80	03	52.5	6,673

Near north border of quadrangle.

Forks of road	32	58	24.2	80	14	57.6	
Crossroad, enters field on south	32	58	23.2	80	14	07.3	4,283

Magnetic declination for quadrangle, 0.6° W.

RHEMS QUADRANGLE.

Northwest along highways through south part of quadrangle to primary traverse station No. 5.
(By Oscar Jones in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork	33	30	10.6	79	22	02.5	1,740
Center of bridge, creek crossing	33	30	23.6	79	22	18.5	1,888
Center of road in front of store	33	31	06.5	79	22	45.8	4,910
Browns Ferry on Black River, 0.25 mile south of; iron post stamped "Prim. Trav. Sta. No. 5"	33	31	59.9	79	23	21.9	6,208
Center of small bridge	33	31	22.3	79	23	50.0	4,479
Center of small stream	33	30	54.6	79	24	07.8	3,176

Magnetic declination for line, 1.8° W.

RHEMS QUADRANGLE—Continued.

Northwest along highways in northeast part of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prim. Trav. Sta. No. 15, in northwest corner of crossroads	33	41	28.1	79	15	03.7	.....
Center of bridge	33	41	21.0	79	15	25.5	1,975
Road fork	33	41	06.8	79	16	18.3	4,694
Center of bridge, western one of three	33	41	17.0	79	17	25.8	5,785
T road west	33	41	21.8	79	17	36.3	1,016
Road fork	33	42	11.2	79	18	15.3	5,979
Crossroads	33	42	40.4	79	18	28.4	3,160
Center of bridge, eastern one of three, at crossroads, 1,000 feet south of Smiths Mills post office	33	43	18.7	79	18	50.8	4,308
Center of bridge	33	43	38.3	79	18	52.2	1,986
Road fork, about 300 feet north of store	33	43	46.8	79	18	47.1	960
Road fork at church	33	44	02.6	79	18	38.6	1,750
Road fork	33	44	56.6	79	18	51.5	5,568

Magnetic declination in northeast part of quadrangle, 2° 04′ W.

Southwest along highways to southwest corner of quadrangle.

Station 1069, tie point, near center of bridge, the eastern one of three at crossroads, 1,000 feet south of Smiths Mills post office.	33	43	19.6	79	18	51.4	.....
Road fork at house	33	43	23.8	79	19	15.3	2,058
Road fork	33	43	27.6	79	20	03.3	4,077
Crossroads	33	43	28.0	79	20	30.1	2,261
Gates across road	33	43	29.5	79	21	51.6	6,892
Williamsburg and Georgetown county-line road, crossroads on	33	43	35.0	79	22	20.7	2,515
Road fork	33	43	04.5	79	23	00.7	4,578
Crossroads at gate	33	42	48.7	79	23	23.3	2,489
Road fork	33	42	18.8	79	23	49.0	3,724
Center of road, at angle in road	33	41	17.4	79	24	35.3	7,327
Road fork	33	40	24.4	79	24	56.7	5,661
Center of road, opposite center of church	33	40	11.2	79	25	02.0	1,401
Oak post office, T road east	33	39	32.7	79	25	07.5	3,923
Road fork, at road through gate at angle in road	33	38	55.5	79	25	09.6	3,769
Center of bridge	33	38	33.5	79	25	19.4	2,369
Union Church, in southeast corner of crossroads at; iron post stamped "Prim. Trav. Sta. No. 33 J, 1918"	33	38	15.7	79	25	27.2	1,915
Black Mingo Creek, center of drawbridge over	33	37	16.9	79	25	59.4	6,037
Center of road, opposite house and gate	33	36	26.8	79	26	17.6	5,299
Rhems store, road fork 0.25 mile north of	33	35	44.0	79	26	32.3	4,500
Road fork	33	34	55.8	79	26	13.1	5,130
Road fork, 280 feet south of bridge	33	34	34.3	79	26	00.8	2,412
Center of culvert, 200 feet west of school	33	33	55.5	79	26	43.4	5,322
Center of road, opposite tobacco barn	33	33	25.5	79	27	26.4	4,740
Center of culvert	33	32	56.5	79	28	03.8	4,309
Road fork	33	32	09.2	79	29	00.7	6,788
Center of bridge	33	31	43.5	79	29	13.4	2,813
Center of bridge	33	31	21.2	79	29	29.5	2,632
Center of bridge over creek	33	30	54.7	79	29	54.7	3,424

Magnetic declination for southwest part of quadrangle, 2° 03′ W.

South along Seaboard Air Line Ry. near west border of quadrangle. (By Oscar Jones in 1918.)

Center of track, opposite switch stand	33	44	24.9	79	27	13.6	.....
Road crossing	33	43	46.5	79	27	38.4	4,420
Road crossing	33	43	15.2	79	27	58.7	3,600
Road crossing	33	42	42.3	79	28	20.0	3,780
Henry, opposite window of depot, center of track	33	41	19.0	79	29	38.7	10,740
Henry, 1,700 feet south of depot, crossing of Seaboard Air Line Ry	33	41	06.1	79	29	52.4	1,747

Southeast along public road through center to south border of quadrangle.

Oak post office, T road east	33	39	32.7	79	25	07.5	.....
Center of bridge	33	39	21.2	79	24	21.9	4,026
Center of bridge	33	39	07.5	79	23	32.9	4,373
Road fork	33	38	46.3	79	22	21.5	6,400
Crossroads	33	38	06.2	79	21	32.4	5,811
Road fork	33	37	35.4	79	21	05.8	3,834
Center of bridge	33	37	12.3	79	20	47.2	2,818
T road northwest	33	36	46.8	79	20	19.4	3,497

RHEMS QUADRANGLE—Continued.

Southeast along public road through center to south border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Dunvegan post office, road fork south, 70 feet southwest in T road north	33 37 03.0	79 19 50.6	2,930
Center of bridge	33 36 01.9	79 19 54.4	5,883
Road fork	33 35 17.9	79 19 47.4	4,787
Road fork	33 34 56.7	79 19 26.3	2,789
Center of road, opposite pine tree on south side of road, tree blazed and marked "U. S."	33 34 23.8	79 18 10.7	7,218
Crossroads	33 34 18.1	79 17 39.5	2,700
Plantersville, 3.5 miles west of, 180 feet west of school, on south side of road, 60 feet west of T road south; iron post stamped "Prim. Trav. Sta. No. 44"	33 33 53.1	79 16 21.8	7,044
Center of bridge	33 33 35.4	79 15 43.1	3,735

Magnetic declination for center of quadrangle, 1° 52′ W.

RIDGEVILLE QUADRANGLE.

South along highway near southwest corner of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Cottageville, 10 miles north of, 45 feet north of Maple Cane Church, 25 feet south of road, 40 feet southeast of crossroads; iron post stamped "Prim. Trav. Sta. No. 40, 1917 Mac."	33 03 06.2	80 29 29.8	.....
T road S. 37° W	33 02 31.5	80 28 52.6	4,722
Forks of road	33 01 48.3	80 29 14.6	4,744
Road fork, 250 feet south of school building	33 01 15.5	80 29 05.7	3,406
T road north	33 00 48.4	80 29 13.9	2,827
Northwest corner of church building	33 00 00.9	80 29 16.9	4,808

Northeast and southeast along highways near south border of quadrangle. (By E. L. McNair in 1917.)

Dim road, 50 feet south of road forks	33 00 27.4	80 25 20.5	.....
Forks of road	33 01 26.3	80 24 28.1	7,440
Givhans Bridge over Edisto River, center of small A truss span	33 01 45.9	80 23 30.6	5,290
Givhans Bridge, about 0.4 mile southeast of, 5 feet south and 30 feet east of T roads, road northeast follows Edisto River and crosses Four Hole Swamp, 2.7 miles northwest from Givhans village; iron post stamped "Prim. Trav. Sta. No. 55, 1917 Mac."	33 01 36.2	80 23 08.3	2,136
	33 01 21.6	80 22 26.0	3,892
Lane south	33 01 01.5	80 20 55.3	7,993
T road corners	33 00 42.1	80 20 16.9	3,815
Road northwest to Ridgeville	33 00 30.4	80 19 53.0	2,354
Forks of road			

Northwest along Southern Ry.

Jedburg spur, public-road crossing	33 03 49.7	80 15 21.6	.....
Center of bridge, 300 feet southeast of milepost 29, headwaters of Ashley River	33 04 34.2	80 16 44.9	8,395
Road crossing	33 05 07.0	80 17 46.4	6,190
Second-class road crossing	33 05 22.4	80 18 15.2	2,900
Ridgeville station, directly opposite, 30 feet north of center of track, 60 feet west of street crossing on Southern Ry.; iron post stamped "Prim. Trav. Sta. No. 61, 1917 Mac."	33 05 44.0	80 18 54.8	4,021
Milepost 32	33 06 00.5	80 19 26.3	3,150
Road crossing	33 06 20.2	80 20 03.1	3,710
Public-road crossing	33 07 43.5	80 22 38.3	15,660
Dorchester, town limit, signpost opposite	33 08 04.5	80 23 17.5	3,950
Dorchester station, directly opposite, about 40 feet southerly from center of track, 20 feet north from center of road; iron post stamped "Prim. Trav. Sta. No. 62, 1917 Mac." Azimuth to crossing signpost, 121° 02′	33 08 18.2	80 23 44.0	2,641
Public-road crossing	33 08 25.7	80 23 59.1	1,491
Milepost 39	33 08 51.5	80 25 45.5	9,415
Pregnall station, directly opposite, 50 feet south of center of track, 40 feet north of public road, 7 feet west of pine tree; iron post stamped "Prim. Trav. Sta. No. 63, 1917 Mac." Azimuth to milepost 41, distant 840 feet, 284° 33′ 40″	33 09 22.2	80 27 54.4	11,382

RIDGEVILLE QUADRANGLE—Continued.

Southwest and southeast along highways.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork, just south of church	33	09	17.1	80	28	09.1	
Center of bridge	33	08	39.2	80	28	18.0	3,899
Forks of road, opposite fence opening on west side of road	33	08	01.8	80	28	27.9	3,877
Second-class crossroad east	33	07	22.1	80	28	39.2	4,120
Angle of 14° in road, on center lines	33	07	00.5	80	28	45.3	2,240
Small bridge, at bend in road	33	06	38.4	80	28	58.5	2,502
Angle of 19° in road, on center lines	33	05	57.8	80	28	47.3	4,220
Crossroads	33	05	40.5	80	28	49.2	1,750
Pregnall, 5 miles south of, on south side of old Charleston and Augusta Road, on east side of Edisto River, 35 feet west of road going south and 70 feet west of road going northwest to Pregnall, about 20 feet south of center of road; iron post stamped "Prim. Trav. Sta. No. 64, 1917 Mac." Azimuth to south edge of chimney on house of Charles Rumple, distant 660 feet, 292° 58′ 10″	33	05	17.8	80	28	55.5	2,354
Crossroads	33	04	53.7	80	27	18.5	8,604
T road northeast	33	04	29.9	80	26	42.9	3,869
Angle of 18° in road, opposite telephone post 1672	33	03	52.5	80	26	02.4	5,119
Forks of road	33	03	31.6	80	25	13.2	4,691
Bridge over Four Hole Swamp, at center of stream, 100 feet from east end of bridge	33	03	21.6	80	24	18.0	4,798
Forks of roads, one S. 30° E. to Givhans Bridge, one N. 63° E. to Ridgeville	33	03	22.8	80	23	53.7	2,080
Forks of road	33	02	44.6	80	23	05.6	5,635
Angle of 28.5° in road, on center lines	33	02	13.4	80	23	06.3	3,147

Southwest along highways.

T road south	33	06	59.8	80	15	19.6	
Forks of road	33	06	49.2	80	16	04.3	3,944
T road corners, 20 feet west of forks of road	33	06	13.9	80	16	05.8	3,571
Forks of road, near northwest corner of Cypress Swamp camp-meeting grounds	33	06	14.9	80	16	30.5	2,105
Crossroads	33	06	11.6	80	17	08.8	3,280
Forks of road	33	05	56.2	80	18	40.4	7,939

Along highways in northwest corner of quadrangle.

Pregnall siding, switch stand at west end of	33	09	29.7	80	28	23.1	
Forks of road	33	09	53.1	80	29	03.5	4,176
Forks of road	33	10	04.1	80	29	19.5	1,753
Crossroads	33	10	27.5	80	28	47.4	3,608
Forks of road	33	11	05.3	80	28	13.9	4,770
Forks of road	33	11	59.3	80	27	56.5	5,650
Forks of road	33	12	36.2	80	27	10.1	5,434
Harleyville station, south of, about 265 feet west of brick public-school building and opposite main entrance thereto, 40 feet east of center of Atlantic Coast Line R. R., 12 feet east of center of road; iron post stamped "Prim. Trav. Sta. No. 66, 1917 Mac." Azimuth to steeple, about 900 feet distant, 227° 30′ 05″; to weather vane on school, 283° 28′ 35″	33	12	41.0	80	26	56.3	1,265
Public-road crossing, just south of Harleyville station	33	12	51.9	80	26	52.9	1,139
Forks of road, 60 feet south of another fork	33	12	58.3	80	26	16.1	3,194
Crossroads, Sevenmile and Bell settlement roads	33	13	24.3	80	25	31.8	4,593
Crossroads, Sevenmile and Bethel roads	33	12	58.4	80	25	04.8	3,484
Crossroads	33	12	58.9	80	24	28.2	3,112
T road S. 60° E., in front of public school, a crossroad is 35 feet N. 34° E	33	13	11.2	80	23	08.8	6,859
Forks of road, at fence line	33	12	41.7	80	22	30.3	4,422
Bethel Church, 6.7 miles east of Harleyville, 140 feet S. 63° 17′ E. from southwest corner of church building, 50 feet west of center of road; iron post stamped "Prim. Trav. Sta. No. 67, 1917 Mac."	33	11	56.3	80	21	26.3	7,119
Forks of road	33	11	36.2	80	21	09.1	2,493
Forks of road, about 90 feet north of another fork	33	10	41.0	80	20	51.2	5,788
Forks of road, in line with tangents	33	09	39.2	80	21	02.1	6,322
Bridge over running stream	33	09	06.5	80	21	26.2	3,885
Orangeburg road, crossing	33	08	49.8	80	21	47.5	2,476

Magnetic declination for south border of quadrangle, 0.3° W.; for northwest border, 0.5° W.; for southwest border, 0.8° W.; for northwest corner, 0.6° W.

RIDGEVILLE QUADRANGLE—Continued.

North along highways. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
NOTE.—This line has a closure error of +1.7″ in latitude and +2.8″ in longitude, probably due to an error of a tape length at an azimuth of about 144° 40′ or 324° 40′. Triplicate computation has been made. (Not adjusted.)	°	′	″	°	′	″	*Feet.*
Ridgeville, iron post 61 (previously described)	33	05	44.0	80	18	54.8	.....
Angle of 22.5° in road	33	06	41.0	80	18	31.0	6,107
Forks of road, junction with Orangeburg Road	33	06	59.8	80	18	19.3	2,141
Forks of road, road north is Gaillard Road	33	07	10.5	80	18	35.0	1,716
Second-class road northwesterly	33	08	05.7	80	18	42.4	5,608
Forks of road, 100 feet north of corner of church	33	08	29.7	80	18	28.1	2,715
Small bridge	33	09	06.4	80	18	25.4	3,721
Forks of road	33	09	51.8	80	18	06.0	4,881
Forks of road, about 15 feet from bridge	33	10	21.0	80	17	41.1	3,638
Forks of road	33	11	23.6	80	17	30.5	6,391
Forks of road	33	12	25.7	80	18	24.8	7,789
Small bridge over running stream	33	12	31.7	80	18	31.6	845
Intersection of two roads, tangents about 0.25 mile long	33	12	53.6	80	18	39.2	2,244
Second-class crossroad	33	13	39.4	80	19	24.6	6,021
T road southeast at Spring Hill Church	33	13	54.0	80	19	30.6	1,560
Ridgeville, 11.75 miles north of, 0.9 mile north of Spring Hill Church, at T road running east to State Road, 10 feet west of T road corner; iron post stamped "Prim. Trav. Sta. No. 65, 1917 Mac." Azimuth to nail in pine tree 6 feet above ground, 1,000 feet distant, 228° 41′ 30″	33	14	40.0	80	19	41.6	4,739
T road corners, junction with State Road (Eutawville quadrangle)	33	15	09.4	80	19	08.0	4,125
Forks of road	33	13	57.7	80	17	50.3	9,806
Forks of road	33	13	24.1	80	17	19.7	4,276
T road southeast	33	13	11.7	80	16	55.7	2,394
Gateway across road	33	12	46.2	80	16	11.9	4,529
Longridge, 0.7 mile northwest of, at forks of road, one fork leads east, 15 feet northwest of gate, 15 feet southwest from center of road, 2.5 feet from wire-fence line; iron post stamped "Prim. Trav. Sta. No. 59 Mac. 1917." Azimuth to blazed pine tree, 560 feet distant, 233° 57′ 40″	33	12	31.5	80	15	28.7	3,958
Adjusted position	33	12	29.8	80	15	25.9	3,958
Second-class road crossing	33	09	42.6	80	29	16.5	.....
Pregnall, Prim. Trav. Sta. No. 63, 1917 Mac. (previously described)	33	09	22.2	80	27	54.4	7,279

Magnetic declination for north part of quadrangle, 0.8° W.

Southeast along highways in northwest corner of quadrangle.

Forks of road, road southwest to St. George	33	14	08.5	80	29	41.8	.....
Forks of road	33	13	41.8	80	28	53.3	4,929
Harleyville, iron post No. 66, 1917 (previously described)	33	12	41.0	80	26	56.3	11,684

South along Atlantic Coast Line R. R. to Harleyville.

Road crossing	33	14	32.6	80	26	41.2	.....
Road crossing	33	14	13.5	80	26	37.8	1,948
Road crossing	33	13	42.5	80	26	38.1	3,129
Harleyville, Prim. Trav. Sta. No. 66 Mac. 1917 (previously described)	33	12	41.00	80	26	56.29	6,402

No mean magnetic declination observed.

RIMINI QUADRANGLE.

East along highways on north border of quadrangle. (By Oscar Jones in 1918.)

Stations.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossroads	33	43	49.6	80	29	54.9	.....
Road forks	33	44	20.2	80	28	57.5	4,745
Rublin road crossing, west side of, center of track of Atlantic Coast Line R. R., 600 feet south of semaphore; nail in tree	33	44	19.0	80	27	48.8	5,801
Road forks	33	44	17.5	80	26	58.4	4,262
Crossroads	33	44	21.1	80	25	26.9	7,734
T road south, at church	33	44	10.6	80	24	31.2	4,820
Road forks	33	44	47.7	80	23	47.6	5,255
Center of bridge	33	44	44.7	80	23	12.1	3,018
Road forks, at house	33	44	41.2	80	22	16.7	4,690
Paxville, 50 feet south of depot, 25 feet east of track, 20 feet north of public-road crossing, in line of telephone poles; iron post stamped "Prim. Trav. Sta. No. 56"	33	44	19.0	80	21	26.0	4,838
Railroad crossing	33	44	42.7	80	21	26.3	2,403
Crossroads	33	44	50.8	80	20	03.7	7,023
T road north	33	44	42.8	80	18	17.5	.....
Road forks, 40 feet north of five mail boxes	33	44	13.2	80	17	27.7	5,162
Road forks	33	44	18.3	80	16	54.3	2,866
Center of road, opposite church	33	44	29.1	80	16	09.4	3,953
Road forks	33	44	39.7	80	15	33.0	3,253
Road forks	33	44	15.7	80	15	01.9	3,577

Magnetic declination near north border of quadrangle, 00° 25′ W.

Southwest along Atlantic Coast Line R. R. across northwest corner of quadrangle. (By Oscar Jones in 1919.)

Pinewood (previously described)	33	44	19.02	80	27	48.86	.....
North end of trestle	33	43	51.3	80	28	05.4	3,130
Road crossing	33	43	15.2	80	28	26.8	4,070
Road crossing	33	42	47.5	80	28	43.3	3,130
Road crossing	33	42	30.2	80	28	53.6	1,950
South end of tangent, angle iron with X in center of track, 190 feet north of road crossing	33	41	37.4	80	29	25.0	5,955
North end of tangent, angle iron with X in center of track	33	41	32.5	80	29	27.3	535
Road crossing	33	40	37.2	80	29	46.0	5,800
South end of tangent, angle iron with X in center of track	33	40	23.2	80	29	50.7	1,479

No magnetic declination observed.

From point near St. Paul east to primary traverse station No. 60, 1919.

St. Paul, 0.5 mile west of, Prim. Trav. Sta. No. 62 (described later)	33	34	18.34	80	24	59.59	.....
Crossroads	33	33	32.0	80	25	21.7	5,038
Road fork to Wrights Landing	33	32	54.8	80	25	35.0	3,924
Road fork	33	32	22.0	80	25	26.3	3,392
T road north	33	32	01.3	80	25	38.9	2,352
Bridge over ditch	33	30	50.1	80	24	37.2	8,887
T road west	33	30	35.3	80	24	18.3	2,197
Road fork	33	30	18.5	80	18	59.8	.....
T road north, at store	33	30	38.5	80	18	44.3	2,408
Taw Caw Creek, center of bridge over	33	31	13.3	80	18	28.2	3,771
T road south	33	31	23.0	80	17	56.3	2,877
T road north, at store	33	31	37.2	80	17	02.0	4,810
St. James white church, center of road opposite	33	31	47.4	80	16	14.8	4,130
Potato Creek, center of bridge over	33	31	50.2	80	15	56.9	1,540
Davis, 6 miles south of, Prim. Trav. Sta. No. 60 J, 1919 (described later)	33	31	57.10	80	15	13.92	3,707

Magnetic declination for center of quadrangle, 1° 13′ W.; for east border, 57′ W.; for south border, 1° 03′ W.

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RIMINI QUADRANGLE—Continued.

From Paxville south along Northwestern R. R. of South Carolina through center of quadrangle to post 62. (By Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Prim. Trav. Sta. No. 56 (previously described)	33	44	18.94	80	21	25.98	.....
Silvor, 400 feet south of depot, road crossing	33	40	33.6	80	21	30.8	22,779
Road crossing	33	39	55.6	80	21	45.3	4,028
Road crossing	33	38	59.8	80	22	06.3	5,905
Road crossing	33	37	26.8	80	22	13.6	9,419
Road crossing	33	36	30.7	80	22	17.9	5,670
Road crossing	33	35	59.9	80	22	20.3	3,120
Road crossing	33	35	45.3	80	22	21.4	1,470
Road crossing	33	35	17.9	80	22	47.4	3,527
St. Paul, 200 feet north of depot, road crossing	33	34	42.5	80	23	32.8	5,247
Center of bridge	33	34	25.4	80	24	08.4	3,467
St. Paul, 0.5 mile west of, on Rimini and Wrights Bluff road, in triangular plot, in line with T road east; iron post stamped "Prim. Trav. Sta. No. 62, 1919 Jones"	33	34	18.34	80	24	59.59	4,381

From Manning south along public roads to post No. 60 at east border of quadrangle.

Road fork	33	36	57.7	80	15	11.0	.....
Road fork	33	36	24.6	80	15	31.3	3,761
Davis, 100 feet east of station, crossing of Northwestern R. R. of South Carolina and public road, center of track	33	36	08.6	80	15	50.7	2,304
Crossroads	33	35	30.6	80	15	22.7	4,513
Center of bridge	33	34	56.5	80	15	11.9	3,560
Center of small bridge	33	34	10.9	80	15	20.6	4,671
T road east at gin	33	33	13.1	80	15	30.9	5,900
T road west	33	32	46.8	80	15	26.7	2,681
Davis, 5 miles south of, at T road north on Charleston and Camden road, in triangular grass plot, 20 feet southeast of mail box; iron post stamped "Prim. Trav. Sta. No. 60, 1919 Jones"	33	31	57.10	80	15	13.92	5,138

From Rimini south along public road and east toward Greelyville.

Spring Grove Creek, center of bridge over	33	39	10.8	80	29	42.9	.....
Road fork	33	38	51.7	80	29	37.8	1,975
Crossroads	33	38	21.2	80	29	19.0	3,468
T road northeast	33	37	34.7	80	28	44.1	5,554
T road southwest	33	36	52.1	80	28	05.4	5,402
Crossroads	33	36	36.8	80	27	53.6	1,840
Crossroads at store	33	36	13.8	80	27	20.5	3,639
Road fork at gin	33	35	46.9	80	26	26.9	5,286
Road fork	33	35	27.6	80	25	56.2	3,251
T road northeast at house	33	35	05.9	80	25	22.4	3,600
Jacks Creek, south end of bridge over	33	34	43.8	80	24	56.4	3,136

From Pinewood north along Atlantic Coast Line R. R. (By Oscar Jones in 1918.)

Pinewood depot (previously described)	33	44	19.02	80	27	48.86	.....
Road crossing	33	44	57.7	80	27	25.8	4,370

ELLENTON QUADRANGLE.

Southeast along Southern Ry. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Ellenton station, 120 feet north of Main Street crossing, 40 feet northeast of center of track, 135 feet south of Bank of Western Carolina; iron post stamped "Prim. Trav. Sta. No. 98, 1918 Mac." Azimuth to Baptist Church spire, 117° 06′ 00″	33	13	18.3	81	44	12.8	.....
Road crossing	33	13	01.6	81	43	58.7	2,070
Road crossing, second class	33	12	17.1	81	43	19.7	5,590
Pile bridge over creek	33	11	53.5	81	42	59.0	2,960
Second-class road crossing	33	11	23.4	81	42	32.5	3,790

ELLENTON QUADRANGLE—Continued.

Southeast along Southern Ry.—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Second-class road crossing	33	10	21.2	81	41	37.9	7,810
Public-road crossing	33	09	44.1	81	41	05.2	4,665
Milepost 28	33	09	14.2	81	40	06.3	5,858
Robbins station, switch stand at north end of	33	09	05.8	81	39	48.2	1,750
Robbins station, 440 feet southeast of, 55 feet from center of Charleston & Western Carolina Ry. track, 60 feet northwest of tangent going east on Atlantic Coast Line R. R.; iron post stamped "Prim. Trav. Sta. No. 99, 1918 Mac"	33	08	52.1	81	39	17.0	2,999
Robbins, U. S. Coast and Geodetic Survey triangulation station, intersection of railroad tangents, at first curve south of Robbins railroad station, about 20 feet from track, in low, swampy place; pine stub and nail	33	08	34.99	81	38	41.43	3,479
Road crossing	33	08	07.8	81	38	11.7	3,740
Road crossing at spur	33	07	46.6	81	37	48.6	2,905
Center of trestle over creek	33	07	32.1	81	37	32.9	1,985
Road crossing	33	07	05.2	81	37	03.6	3,695
Hattieville, U. S. Coast and Geodetic Survey traverse station, about 200 meters south of Hattieville railroad station and 50 feet from track in a low, wet place; a 2-foot drain tile set in cement with a nail in center of upper end	33	06	40.43	81	36	36.73	3,388

Southwest along Atlantic Coast Line Ry.

Crossing of lumber company's railroad under Atlantic Coast Line R. R	33	13	20.8	81	30	34.4	.....
Kendell, public-road crossing, post-office name Donora	33	13	15.3	81	31	00.5	2,285
Road crossing	33	13	11.6	81	31	56.7	4,790
Road crossing	33	13	03.0	81	32	36.7	3,511
Dunbarton station, directly opposite office window, 30 feet south of center of track, 80 feet west of main street; iron post stamped "Prim. Trav. Sta. No. 104, 1918 Mac." Azimuth to water tank, 1,200 feet distant, 341° 48′	33	12	46.2	81	33	15.5	3,708
Road crossing	33	12	28.1	81	33	59.0	4,120
Road crossing	33	12	09.5	81	34	32.5	3,408
Public-road crossing under railroad	33	11	01.3	81	34	57.0	7,202
Public-road crossing	33	10	06.7	81	35	39.9	6,612
Myers Mill station, 530 feet west of, public-road crossing	33	10	07.5	81	35	57.3	1,477
Second-class road crossing	33	09	53.8	81	37	00.5	5,550
Road crossing	33	09	41.1	81	37	16.7	1,885
Road crossing	33	09	06.0	81	38	06.2	5,509
Public-road crossing	33	08	56.3	81	38	53.5	4,135
Robbins, Prim. Trav. Sta. No. 99 (previously described)	33	08	52.1	81	39	17.0	2,043

Southeast along Southern Ry.

Hattieville, U. S. Coast and Geodetic Survey traverse station (previously described)	33	06	40.43	81	36	36.73	.....
Road crossing, 460 feet south of switch stand at spur	33	06	16.9	81	35	39.3	5,436
Road crossing, at spur	33	05	47.8	81	34	28.2	6,726
Road crossing	33	05	36.5	81	34	00.6	2,607
Road crossing, at sawmill	33	05	16.8	81	33	12.4	4,565
Road crossing	33	05	00.7	81	32	33.2	3,710
Millet station, road crossing	33	04	52.3	81	32	12.7	1,935
Road crossing, second class	33	04	35.5	81	31	31.6	3,895
Averill spur, 1,200 feet east of switch stand at, road crossing	33	04	28.0	81	30	33.9	4,962

Near northwest corner of quadrangle. (By B. H. Yoakum in 1918.)

T road west	33	12	43.4	81	44	42.2	.....

Along highways near west border of quadrangle. (By E. L. McNair in 1918.)

T road north to Griffins Landing	33	03	14.1	81	43	29.3	.....
T road south	33	03	42.6	81	44	39.8	6,661

ST. GEORGE QUADRANGLE.

East along highways near south border of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Mount Carmel Church, 60 feet south and 15 feet east of, T road east, on root of blazed 30-inch oak tree, on south side of tree; copper nail	33 00 00.9	80 41 41.2	.....
Forks of road	33 00 09.00	80 41 13.0	2,536
T road north at fence corner	33 00 09.9	80 40 19.9	4,525
Forks of road just before entering lane	33 00 03.0	80 39 26.0	4,650
Right angle in road, second-class road northeast	33 00 17.3	80 38 56.0	2,937
Pleasant Grove Church, crossroads at, 9 feet to nail in pine tree, 25 feet to nail in oak tree, 36 feet to nail in sweet-gum tree	33 00 06.2	80 38 13.2	3,810
Road forks	33 00 07.3	80 37 45.1	2,393
Farm-road crossing on lumber road	33 00 26.6	80 36 03.5	8,873
T road west, point is 30 feet south of mail box	33 01 03.5	80 34 58.4	6,680
Road forks	33 00 24.3	80 34 28.1	4,721

From point near center of south border north and east through center of south part of quadrangle.

Second-class road crossing, T road west	33 01 02.3	80 38 00.3	5,778
Definite angle in road	33 01 38.9	80 37 34.7	4,292
Road crossing, near Old Red Bank Church	33 02 09.4	80 37 40.0	3,116
Weeks post office, 25 feet south and 15 feet east of crossroads, 4 feet north of corner of post office building, 23 feet from corner of fence; iron post stamped "Prim. Trav. Sta. No. 10, 1917 Mac."	33 03 21.9	80 37 10.8	7,732
Forks of road	33 02 52.8	80 35 57.5	6,895
Private crossroads, at gate on north	33 02 46.4	80 35 27.4	2,644
T road south, opposite gate on north side	33 02 49.4	80 34 13.4	6,303
T road south	33 02 51.8	80 33 29.7	3,732
T road south	33 02 50.9	80 32 48.2	3,528
Unused T road north, at pine stake marked "XIII"	33 02 48.2	80 32 01.4	4,000
Cross roads at three mail boxes	33 02 53.4	80 31 25.4	3,110

Magnetic declination near south border of quadrangle, 0°10′ E.

Southeast along Southern Ry.

Second-class road crossing	33 13 35.3	80 43 40.8	.....
Dorange station, road crossing	33 13 20.1	80 42 45.4	4,945
Milepost 55	33 13 00.6	80 41 34.0	6,385
Road crossing	33 12 51.0	80 40 58.6	3,150
Private-road crossing	33 12 41.7	80 40 24.1	3,085
Milepost 53	33 12 28.4	80 39 35.6	4,330
Reeseville station, directly opposite and across track from, 20 feet south of center of track, 60 feet west of public-road crossing; iron post stamped "Prim. Trav. Sta. No. 3, 1918 Mac." Azimuth to milepost 52, distant 1,130 feet, 287° 47′ 25″	33 12 15.6	80 38 49.2	4,145
Intersection of tangents, 50 feet west of milepost 51	33 11 56.4	80 37 38.0	6,360
Badham station, road crossing	33 11 41.0	80 36 51.5	4,240
Intersection of tangents, 290 feet east of milepost 49	33 11 17.0	80 35 38.7	6,650
St. George station, directly opposite west end of and across track from, 52 feet from southwest corner of building; iron post stamped "Prim. Trav. Sta. No. 4, 1918." Azimuth to Baptist Church spire, 143° 11′	33 10 59.1	80 34 27.6	6,300
Public-road crossing	33 10 42.5	80 33 19.8	6,002
Second-class road crossing	33 10 35.1	80 32 49.8	2,665
Second-class road crossing	33 10 23.7	80 32 04.1	4,045
Byrd station, road crossing	33 10 08.5	80 31 02.3	5,475
Road crossing	33 10 03.2	80 30 40.7	1,910

West along highways near center of quadrangle.

Indian Field Swamp, bridge over	33 05 26.6	80 30 46.0	.....
Forks of road, 120 feet east of another fork	33 05 28.2	80 31 01.2	1,307
T road south	33 05 16.5	80 31 26.0	2,424
Fork of road	33 05 44.4	80 32 37.2	6,680
T road north	33 05 50.3	80 33 26.9	4,267
Fork of road	33 06 11.4	80 35 14.0	9,358
Grover, crossroads at	33 06 19.0	80 35 39.0	2,264
Second-class crossroads	33 06 50.8	80 36 45.2	6,485
Fork of road, 100 feet east of T road south	33 07 05.1	80 37 15.9	2,985
Second-class crossroads	33 07 29.6	80 37 51.6	3,911
T road northeast leading to St. George	33 07 43.7	80 38 08.7	2,042
Appleby Church, fork of road near, 120 feet east of point where wagon tracks come together	33 08 12.8	80 39 08.6	5,875
Fork of road	33 08 39.0	80 40 07.8	5,691

ST. GEORGE QUADRANGLE—Continued.

West along highways near center of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Fork of road	33	08	52.5	80	41	09.0	5,381
Center of Cattle Creek, bridge over	33	08	56.4	80	41	32.4	2,026
Angle of 6° in road, 75 feet southeast of small bridge over ditch	33	09	22.6	80	42	21.7	4,959
Beulah Church, T road north	33	09	42.9	80	42	54.3	3,448
T road east	33	10	32.1	80	42	27.5	5,470
T road west	33	10	37.7	80	42	05.0	1,995
T road southeast	33	11	25.8	80	42	14.5	4,923
T road north	33	11	52.9	80	42	11.7	2,754
Fork of road	33	12	40.5	80	42	28.4	5,015
Dorange, public-road crossing	33	13	20.1	80	42	45.4	4,254

Magnetic declination through center of quadrangle, 14′ W.

South along highways near east border of quadrangle.

St. George station, "Prim. Trav. Sta. No. 4, 1918, Mac." (previously described)	33	10	59.1	80	34	27.6	.....
Forks of road, settlement road southeast	33	09	51.3	80	34	27.9	6,854
T road east	33	09	26.6	80	34	29.4	2,491
Forks of road, on center lines three ways	33	09	08.0	80	34	13.8	2,300
Center of creek crossing	33	08	00.4	80	34	51.6	7,540
T road southeast	33	07	43.0	80	35	13.8	2,577
T road north	33	07	30.5	80	35	19.7	1,354
Forks of road	33	06	43.9	80	35	32.3	4,830
Grover, crossroads at store	33	06	19.0	80	35	39.0	2,574
Fork of road, 340 feet north of negro cabin	33	05	46.3	80	35	51.7	3,478
Second-class crossroad	33	05	05.6	80	36	11.3	4,435
Second-class road westerly	33	04	24.8	80	36	30.9	4,445
Center of small wooden truss bridge across Edisto River	33	03	51.1	80	36	47.0	3,665
Weeks, "Prim. Trav. Sta. No. 10, 1917 Mac." (previously described)	33	03	21.9	80	37	10.8	3,578
Small bridge over creek	33	03	33.2	80	37	32.0	2,130
T road southwest near gateway across road	33	04	23.3	80	38	10.7	6,042
Second-class road southwest	33	04	50.4	80	38	46.0	4,066
Fork of road to Raysor's bridge	33	05	44.5	80	40	14.8	9,330
Fork of road, second-class road south, along fence	33	06	09.9	80	41	21.2	6,203
Angle of 16½°, at ditch line crossing road	33	06	34.1	80	41	47.2	3,293
Green Pond Church, T road southwest near	33	06	52.1	80	42	11.7	2,762
Second-class crossroads	33	06	37.3	80	42	43.2	3,069
Small bridge, no creek	33	06	21.3	80	43	44.0	5,421
Small bridge	33	06	17.3	80	44	19.2	3,025

Magnetic declination along east border of quadrangle, 07′ W.; near south border, 23′ W.

Green Pond Church, T road southwest near	33	06	52.1	80	42	11.7	.....
Green Pond Church, 0.6 mile northwest of, opposite small cemetery, 35 feet north of road, in open ground; iron post stamped "Prim. Trav. Sta. No. 6, 1918, Mac." Azimuth to top of B. Risher monument, 225° 35′ 20″	33	07	06.2	80	42	43.9	3,096
T road northeast	33	07	59.2	80	44	04.2	8,673
T road southwest	33	08	15.9	80	44	38.5	3,375

Northeast along highways near east border of quadrangle.

St. George station, directly opposite west end of and across track from, 52 feet from southwest corner of building, 20 feet south of center of track, 45 feet east of street crossing; iron post stamped "Prim. Trav. Sta. No. 4, 1918, Mac." Azimuth to Baptist Church spire, 143° 11′	33	10	59.1	80	34	27.6	.....
T road northwest	33	11	44.2	80	33	56.9	5,252
T road southeasterly	33	11	55.0	80	33	18.4	3,447
Angle of 31° in road, on center line both ways	33	12	38.5	80	32	25.8	6,272
Forks of road, road northeast runs to Harleyville	33	13	17.1	80	32	24.3	3,903
Indian Field Creek, bridge over	33	13	46.6	80	32	23.7	2,973
Forks of road	33	14	31.8	80	32	04.9	4,843
Forks of road	33	14	52.5	80	30	37.3	.....

Magnetic declination for east border of quadrangle, 0° 26′ W.

ST. GEORGE QUADRANGLE—Continued.

Southeast along highways in southwest corner of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Forks of road	33	01	36.0	80	44	15.2	.....
Forks of road, at mail box near colored schoolhouse	33	01	10.8	80	43	13.4	5,847
Forks of road, second-class road northeast	33	00	42.1	80	42	33.3	4,484
Creek crossing, bridge over	33	00	27.4	80	42	12.2	2,326
Mount Carmel Church, 60 feet south of (previously described)	33	00	00.9	80	41	41.2	3,764

Magnetic declination for southwest part of quadrangle, 0° 28′ W.

ST. MATTHEWS QUADRANGLE.

Along highways near south border of quadrangle. (By Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Granite post, township corner, at northwest corner of crossroads	33	30	21.4	80	57	22.6	.....
Grape Branch, center of bridge over	33	30	46.8	80	57	56.6	3,859
Road fork	33	31	11.2	80	58	50.7	5,200
Orangeburg, 10 miles west of, on "96 road," at northeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 77, 1918. Elev. 286."	33	31	22.5	80	59	45.9	4,804

Southwest along Atlantic Coast Line R. R. in southeast corner of quadrangle.

Road crossing at Fersner's	33	32	10.4	80	45	24.4	.....
Road crossing	33	31	45.6	80	46	13.6	4,860
Road crossing	33	31	30.9	80	46	42.8	2,880
Road crossing	33	31	14.9	80	47	14.6	3,140
Road crossing	33	30	53.0	80	47	58.0	4,290
Road crossing, Orangeburg and Cameron road	33	30	21.9	80	48	59.8	6,100
Road crossing	33	30	06.3	80	49	28.2	2,869

Northwest along public road in southeast corner of quadrangle.

Center of bridge, at crossroads	33	30	12.2	80	48	25.0	.....
Road crossing Orangeburg and Cameron road (previously described)	33	30	21.9	80	48	59.8	3,110

North along public road to Swansea.

Granite post (previously described)	33	30	21.4	80	57	22.6	.....
Road fork at church	33	30	53.9	80	57	10.9	3,430
North end of bridge over North Fork of Edisto River	33	31	31.1	80	56	50.5	4,134
Robinson, crossing on Orangeburg R. R	33	32	24.6	80	56	26.6	5,774
T road south	33	33	10.9	80	55	49.8	5,622
T road south	33	33	29.1	80	56	39.6	4,590
Road fork	33	34	12.7	80	57	43.0	6,941
Road fork at schoolhouse	33	34	47.1	80	58	18.1	4,568
Orangeburg, 10 miles northwest of, on Orangeburg and North road, in line with T road north, 2 feet north of telephone pole and two mail boxes; iron post stamped "Prim. Trav. Sta. No. 78, 1919 J"	33	35	25.34	80	58	58.41	5,150
Road fork west	33	36	20.0	80	58	30.4	6,015
Crossroads	33	37	11.4	80	58	30.9	5,192
Road fork	33	37	42.8	80	58	33.8	3,178
Crossing of public road and Orangeburg and Calhoun county line	33	38	11.0	80	58	37.3	2,858
Crossroads	33	38	57.5	80	58	47.2	4,769
Road fork	33	39	25.5	80	58	47.7	2,828
Road fork	33	39	56.8	80	58	24.6	3,721
Crossroads, on Kennerly road	33	40	09.0	80	57	37.9	4,137
Center of road, opposite house on east side	33	40	32.2	80	57	50.5	2,572
Road fork	33	41	09.0	80	57	56.9	3,759
Crossroads	33	41	39.9	80	58	19.2	3,644
Swansea, 8 miles southeast of, on Kennerly road, in southwest corner, at crossroad to St. Matthews; iron post stamped "Prim Trav. Sta. No. 79, 1919 J"	33	42	03.76	80	58	37.09	2,840
Road fork at gin	33	42	47.8	80	59	03.9	4,985
T road north to house	33	43	41.2	80	59	51.3	6,724

ST. MATTHEWS QUADRANGLE—Continued.

From Cameron northwest along State road to Columbia.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork	33	36	52.6	80	45	28.5	.....
Center of bridge	33	37	18.2	80	45	57.3	3,553
Road fork	33	37	57.3	80	46	43.2	5,535
St. Matthews, 2 miles south of, at crossing of State road and Southern Ry., west side of track, north side of State road, 4 feet southeast of crossing sign; iron post stamped "Prim. Trav. Sta. No. 80, 1919 J"	33	38	28.32	80	47	26.01	4,789
Center of concrete culvert	33	38	42.5	80	47	42.4	1,990
Road fork	33	39	40.6	80	48	53.7	8,418
Road fork	33	40	06.2	80	49	25.0	3,701
Crossroads	33	40	18.7	80	49	40.5	1,820
Road fork	33	40	34.8	80	50	00.3	.....
Road fork	33	40	52.3	80	50	27.9	2,930
Center of road, opposite church	33	41	21.1	80	51	01.5	4,068
Center of bridge	33	41	56.6	80	51	33.4	4,490
Road fork	33	42	14.8	80	51	49.7	2,291
St. Matthews, 7 miles northwest of, at northeast corner of crossing of Fort Motte and Swansea road with State road; iron post stamped "Prim. Trav. Sta. No. 81, 1919 J"	33	42	52.29	80	52	14.69	4,339
Road fork	33	43	40.4	80	52	34.9	5,149
Crossroad at church	33	44	34.1	80	53	10.8	6,219
Angle in road, opposite house on east side	33	44	53.0	80	53	36.9	2,916

North along public road on line from Orangeburg to post 79.

Road fork	33	30	12.7	80	51	31.3	.....
Crossroads	33	30	44.7	80	51	59.6	.....
Road fork	33	31	21.1	80	51	54.3	3,712
Road fork	33	31	57.1	80	51	47.3	3,680
Center of bridge	33	32	32.0	80	51	52.1	3,546
Road fork	33	33	15.7	80	51	45.6	4,448
Center of bridge	33	34	01.1	80	51	50.7	4,610
Road fork	33	34	41.6	80	51	46.7	4,109
Center of bridge	33	35	09.0	80	51	58.0	2,921
Crossroads	33	35	47.4	80	52	16.4	4,181
Orangeburg, 9 miles north of, at St. John Church, 50 feet west of northwest corner and in line with north side; iron post stamped "Prim. Trav. Sta. No. 83, 1919 J"	33	36	05.00	80	52	23.45	1,876
Center of bridge	33	36	56.9	80	52	47.8	5,630
Road fork	33	37	36.5	80	52	53.1	4,025
Road fork to St. Matthews	33	37	49.2	80	52	52.6	1,290
Center of culvert	33	38	30.5	80	53	05.3	4,309
Center of bridge	33	38	46.5	80	53	43.0	3,566
Road fork	33	39	12.1	80	54	08.8	3,379
Center of road, opposite house and mail box	33	39	58.8	80	54	40.8	5,438
Crossroads	33	40	36.5	80	55	06.2	4,380
Center of road, opposite gate to gin	33	41	15.1	80	55	38.4	4,756
Road fork	33	41	48.8	80	56	16.6	4,689
Road fork near church	33	42	16.3	80	57	14.7	5,638
Center of bridge	33	42	07.5	80	58	02.2	4,115
Swansea, 8 miles southeast of, "Prim. Trav. Sta. No. 79" (previously described)	33	42	03.76	80	58	37.09	2,969

North along public road to the red store.

Road fork near church (previously described)	33	42	16.34	80	57	14.69	.....
Crossroads at Zeigler's store	33	42	41.8	80	57	14.0	2,577
Crossroads	33	43	35.2	80	57	14.5	5,392
Center of bridge	33	44	08.3	80	57	15.5	3,345
Beaver Creek, center of bridge over	33	44	21.9	80	57	13.8	1,381
Road fork	33	44	48.8	80	57	33.5	3,185

East along public road to post 81.

Road fork (previously described)	33	41	48.8	80	56	16.6	.....
Road fork	33	41	47.9	80	55	30.5	3,893
T road south	33	42	09.0	80	54	29.6	5,570
Crossroads	33	42	25.8	80	54	21.4	1,834
Road fork	33	42	28.9	80	53	08.2	6,192
St. Matthews, 7 miles northwest of, Prim. Trav. Sta. No. 81, 1919 J (previously described)	33	42	52.29	80	52	14.69	5,096

ST. MATTHEWS QUADRANGLE—Continued.

From post 81 east along public road to Fort Motte.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
"Prim. Trav. Sta. No. 81, 1919 J"	33	42	52.29	80	52	14.69	.....
Center of concrete bridge	33	43	12.3	80	51	49.9	2,905
Road fork	33	43	52.0	80	51	19.0	4,789
Road fork	33	44	11.1	80	50	33.9	4,267
Road fork	33	44	17.7	80	49	59.3	2,993
Center of road, opposite three mail boxes at road fork	33	44	29.9	80	49	09.8	4,352
Road fork	33	44	45.3	80	48	37.0	3,180
Road fork at three mail boxes	33	44	12.5	80	47	36.2	6,111
Center of bridge at old mill	33	43	17.2	80	46	51.2	6,761
Road fork	33	43	20.5	80	46	22.6	2,429
Road fork	33	43	23.0	80	45	59.2	1,995
Crossroads	33	43	40.6	80	45	19.3	3,803

From post 80 along Southern Ry. to Fort Motte.

St. Matthews, 2 miles south of, "Prim. Trav. Sta. No. 80, 1919 J" (previously described)	33	38	28.32	80	47	26.01	.....
Road crossing	33	39	02.9	80	47	06.0	3,880
Road crossing	33	39	31.3	80	46	49.6	3,190
St. Matthews, opposite semaphore of station, center of track	33	40	06.2	80	46	29.6	3,904
Road crossing	33	40	21.6	80	46	18.8	1,808
Road crossing	33	40	43.2	80	45	28.1	4,803

Magnetic declination for quadrangle, 0° 13′ W.

SALUDA QUADRANGLE.

West near south border of quadrangle. (By E. L. McNair in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	34	00	43.5	81	45	09.3	.....
Road fork 1 mile east of Saluda, 70 feet west of milepost marked "1 mile"	34	00	42.2	81	45	32.6	1,959
Saluda crossroad, at 500 feet west of St. Paul's M. E. Church	34	00	14.1	81	46	11.1	4,316
Saluda, about 0.5 mile northwest of, on road to Good Hope Church, 15 feet north of center of road, across road from house of Ben Rankin; iron post stamped "Prim. Trav. Sta. No. 4, 1919 Mac." Azimuth to spire on Lutheran Church, 341° 27′ 45″.	34	00	25.7	81	46	38.3	2,570
Forks of road, about 100 feet easterly from milepost 1	34	00	31.2	81	47	06.7	2,454
T road N. about 15° E	34	01	06.1	81	48	35.0	8,234
Creek crossing	34	00	20.5	81	49	14.2	5,670
T road west between two farm buildings	34	00	14.5	81	49	32.2	1,626

Magnetic declination along south border of quadrangle, 00° 00′.

SANTEE QUADRANGLE.

Northeast through north half of quadrangle. (By Oscar Jones in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
South one of two small bridges	33	07	13.0	79	29	44.9	3,885
Crossroads	33	07	31.0	79	29	20.3	2,766
Center of small bridge	33	07	49.6	79	29	02.8	2,398
Center of road, in front of schoolhouse	33	08	02.4	79	29	04.2	1,297
Center of road, opposite house and gate on west side of road	33	09	01.5	79	28	57.8	5,998
Center of small bridge	33	09	42.7	79	28	22.4	5,131
Road forks	33	10	03.9	79	28	13.7	2,267
St. James brick church, northeast corner	33	10	17.9	79	27	55.1	2,120
Road fork, at large pond	33	11	12.4	79	26	20.4	9,758
Crossroads	33	11	20.8	79	26	02.9	1,709

SANTEE QUADRANGLE—Continued.

Northeast through north half of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
South Fork of Santee River, south bank, at James Ferry	33	11	57.2	79	25	08.4	5,909
South Fork of Santee River, north bank	33	12	07.4	79	25	04.0	1,096
North Fork of Santee River, south bank	33	12	55.7	79	24	06.1	6,935
North Fork of Santee River, north bank	33	12	59.1	79	24	00.1	610
Road fork	33	12	52.0	79	23	00.8	5,090
Road fork 1 mile east and 0.5 mile north of Lynch's Ferry across Santee River; iron post stamped "Prim. Trav. Sta. No. 3"	33	13	16.5	79	22	44.5	2,832
Center of road, in front of house	33	14	20.6	79	22	33.0	6,555
Road fork	33	14	59.8	79	22	30.6	3,965
East along highways in north part of quadrangle.							
Road forks	33	14	58.6	79	24	57.0	.....
Road fork	33	14	56.5	79	24	51.5	512
Creek crossing	33	14	44.3	79	24	37.8	1,696
Road fork	33	14	23.8	79	24	01.6	3,708
Center of bridge	33	13	57.8	79	23	08.2	5,237
Prim. Trav. Sta. No. 3, junction of line from Charleston to Georgetown=station 278	33	13	16.5	79	22	44.5	4,636
Road crossing	33	13	00.3	79	22	04.5	3,772
Road fork	33	13	01.0	79	21	32.1	2,760
Road fork at church	33	13	03.5	79	21	15.9	1,396
Creek crossing	33	12	58.9	79	20	56.0	1,758
Crossroads	33	12	55.0	79	20	43.8	1,100
Creek crossing	33	13	12.2	79	20	05.3	3,705
Crossroads	33	13	11.0	79	19	57.8	648
Crossroads	33	13	04.0	79	19	32.1	2,296
Road fork to Kinlock Gun Club	33	12	57.5	79	19	09.5	2,030
Road fork	33	12	59.0	79	18	02.8	5,669
Road fork	33	13	35.0	79	17	47.2	3,872
Center of road, opposite pine tree marked "U. S."	33	14	13.6	79	17	20.1	4,530

Magnetic declination for north part of quadrangle, 1.5° W.

East along highways. (Partly checked by flat triangle to Cape Romain Lighthouse. By Oscar Jones in 1917.)

Center of road, opposite 34th milepost	33	05	52.4	79	29	22.8	.....
Center of bridge	33	06	00.1	79	28	52.4	2,706
Iron bench-mark post, elevation 12.7, U. S. Dept. of Agriculture	33	05	34.4	79	28	28.3	3,310
Road fork	33	05	35.9	79	27	53.4	2,972
McClellansville, crossroads at Methodist Church	33	05	10.4	79	27	38.0	2,893
Road fork	33	05	43.6	79	26	32.2	6,528
Center of bridge over ditch	33	06	04.8	79	26	01.0	3,411
Crossroads	33	06	11.3	79	25	46.5	1,398
Cape Romain Lighthouse, U. S. Coast and Geodetic Survey station (connected with by poor triangulation)	33	01	07.59	79	22	25.60	35,004

Magnetic declination for east part of quadrangle, 1.0° W.

SAVANNAH QUADRANGLE.

By E. L. MacNair in 1917.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
North end of approach to girder bridge crossing Savannah River	32	14	26.9	81	07	58.5	.....
In northeast corner of quadrangle. (By H. S. Senseney in 1918.)							
Pritchard station, railroad crossing 500 feet north of	32	14	38.9	81	00	00.0	.....
Pritchard station, 0.90 mile southwest of, east end of iron bridge	32	14	10.3	81	00	43.8	4,740
T road northwest, at old store	32	13	54.0	81	01	11.8	2,917
Road forks	32	14	19.1	81	01	29.4	2,956

SCRANTON QUADRANGLE.

North along Atlantic Coast Line R. R. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Center of small culvert	33 45 15.6	79 47 44.5	.....
Center of small trestle	33 45 41.7	79 47 35.0	2,760
Road crossing	33 46 11.3	79 47 24.2	3,130
Cades station, 50 feet south of, 30 feet west of track, 3 feet east of crossing sign; iron post stamped "Prim. Trav. Sta. No. 2 J, 1918"	33 47 06.8	79 47 04.2	5,857
Road crossing	33 48 17.7	79 46 38.0	7,500
Road crossing	33 49 11.3	79 46 19.1	5,649
Road crossing	33 49 41.4	79 46 09.1	3,150
Road crossing	33 50 18.0	79 45 56.8	3,840
Road crossing	33 50 51.9	79 45 45.5	3,560
Road crossing	33 51 35.1	79 45 31.0	4,540
Lake City station, 100 feet northwest of northwest corner of, 2 feet north of crossing sign; iron post stamped "Prim. Trav. Sta. No. 3 J, 1918"	33 52 17.8	79 45 17.0	4,480
South end of trestle	33 52 45.3	79 45 07.5	2,880

Magnetic declination north along Atlantic Coast Line R. R., 1° 46′ W.

East along highways. (By Oscar Jones in 1918.)

Road fork	33 45 06.1	79 55 55.7	.....
Gate across road	33 45 46.1	79 55 57.0	4,052
Center of bridge	33 46 11.4	79 56 03.3	2,720
Crossroads at gin	33 46 54.6	79 56 07.2	4,382
Center of bridge	33 47 37.3	79 56 26.3	4,608
Cades Road and Pudding Swamp Road, junction, 10 miles west of Cades, in triangle grass plot at road fork; iron post stamped "Prim. Trav. Sta. No. 39 J, 1918"	33 48 35.3	79 56 39.2	5,962
Center of bridge	33 48 36.4	79 56 07.8	2,649
Gate across road	33 48 50.2	79 55 19.9	4,278
Center of bridge	33 49 01.0	79 53 59.8	6,849
Church and schoolhouse, crossroads	33 49 00.2	79 53 11.4	4,085
Crossroads	33 48 45.1	79 52 14.5	5,039
T road south at 5-mile post	33 48 32.3	79 51 26.0	4,289
Center of bridge	33 48 17.6	79 50 32.1	4,781
Gate across road	33 47 55.0	79 49 29.9	5,732
Crossroads	33 47 45.7	79 49 02.1	2,520
Bend in road, end of tangent from Cades	33 47 47.0	79 48 36.8	2,138
Crossroads	33 47 25.8	79 47 26.5	6,311
Cades, Prim. Trav. Sta. No. 2 (previously described)	33 47 06.8	79 47 04.2	2,693

Magnetic declination east along highways, 1° 17′ W.

East along public road near south and east borders of quadrangle. (By Oscar Jones in 1918.)

Cades, Prim. Trav. Sta. No. 2 (previously described)	33 47 06.8	79 47 04.2	.....
Road fork	33 47 12.6	79 46 42.4	1,927
Road fork	33 46 49.4	79 45 26.9	6,791

Along highways near west border of quadrangle.

Prim. Trav. Sta. No. 39 (previously described)	33 48 35.3	79 56 39.2	.....
Road fork	33 49 18.0	79 56 53.2	4,480
Pudding Creek, center of bridge over	33 49 24.2	79 57 23.6	2,644
Road fork	33 49 24.1	79 57 50.9	2,300
Center of bridge	33 49 28.3	79 58 36.6	3,881
Center of small culvert, near bend in road	33 49 46.8	79 59 45.8	6,135

Along highways through center of quadrangle.

Crossroads	33 52 33.2	79 59 07.5	.....
Bridge, west end of	33 51 49.4	79 58 13.3	6,362
Sawmill, road fork at	33 51 58.3	79 57 14.0	5,086
Railroad crossing	33 52 28.4	79 57 03.5	3,165
Crossroads at store	33 53 09.3	79 56 44.6	4,440
Road fork	33 53 09.8	79 55 58.2	3,904
Road fork	33 53 13.6	79 55 24.0	2,910

SCRANTON QUADRANGLE—Continued.

Along highways through center of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Central, in southwest corner of schoolhouse yard, 70 feet south and 10 feet west of flowing well; iron post stamped "Prim. Trav. Sta. No. 40 J"	33	53	17.2	79	54	42.6	3,513
Road to house	33	53	15.2	79	53	27.8	6,304
Center of the more western of two bridges	33	53	09.4	79	52	52.4	3,040
Road fork	33	52	59.4	79	52	05.1	4,114
Crossroads	33	53	29.1	79	51	17.3	5,031
Road fork at well	33	53	05.0	79	50	50.9	3,302
Road fork	33	52	57.1	79	49	57.5	4,570
Tram railroad crossing	33	53	09.8	79	49	21.3	3,307
Center of bridge	33	53	13.4	79	48	36.7	3,775
Road fork at large signboard	33	53	20.6	79	47	54.9	3,599
Center of bridge	33	53	12.4	79	47	28.9	2,347
Center of bridge	33	52	43.7	79	46	16.1	6,786
Road fork at city limits	33	52	34.8	79	45	41.6	3,044
Lake City, Prim. Trav. Sta. No. 3 (previously described)	33	52	17.8	79	45	17.0	2,687

North along highways near west border of quadrangle.

Road fork, 100 feet north of bridge	33	54	41.1	79	54	00.6	.....
T road west at church	33	54	29.3	79	58	27.5	3,031
Road fork	33	54	58.7	79	57	48.7	4,419
T road northwest	33	55	49.5	79	56	54.7	6,858
Woods Mill, center of bridge	33	56	49.5	79	58	25.7	9,777
Road fork	33	57	20.1	79	59	04.6	4,500
Crossroads	33	57	55.0	79	59	42.4	.....
Crossroads, Atlanta and Lynchburg and Hudson Bridge roads, in northwest corner of; iron post stamped "Prim. Trav. Sta. No. 41, 1918"	33	58	20.6	79	59	23.8	3,020
Road fork	33	58	39.0	79	58	54.2	3,113
Road fork	33	59	40.0	79	58	06.1	7,374

Along highways near north border of quadrangle.

Center of road, opposite church	33	59	47.5	79	55	53.1	.....
Road fork	33	59	12.3	79	55	01.6	5,606
Mott's crossroads	33	58	42.3	79	54	18.0	4,769
Road fork	33	58	56.2	79	53	24.2	4,743
Lynch River, center of Welch Bridge over	33	59	22.6	79	53	10.0	2,921
T road northwest	33	59	53.8	79	52	34.0	4,379
Crossroads at store	33	59	21.2	79	48	35.8	.....
T road north	33	59	17.7	79	47	27.3	5,778
Road fork at house	33	59	37.5	79	47	08.8	2,538
Crossroads	33	58	49.4	79	59	34.0	.....
Crossroads	33	59	33.5	79	59	36.5	4,455

Magnetic declination for north border of quadrangle, 1° 20′ W.; for west border, 0° 54′ W.; for east border, 1° 28′ W.; for center, 1° 04′ W.

SEIVERN QUADRANGLE.

Along highways near west border of quadrangle. (By B. H. Yoakum in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Cedar Creek, center of bridge over	33	38	34.0	81	29	14.7	.....
Crossroads	33	38	42.5	81	28	10.8	5,466
Bethcar School, 800 feet west of, road forks	33	38	51.1	81	26	59.8	6,068
Bethcar Church, 900 feet north of, 15 feet north and 25 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 11, 1918 Y"	33	38	54.1	81	26	19.5	3,422
Lane northwest to residence of John Gross	33	37	42.8	81	26	48.4	7,611
Road forks	33	37	28.0	81	27	01.6	1,861
Crossroads at Dora Baldwin's residence	33	37	10.4	81	27	18.5	2,283
Road forks	33	36	42.9	81	27	39.5	3,294

SEIVERN QUADRANGLE—Continued.

Along highways near west border of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks, 30 feet north of, 190 feet west of Burkaloo Creek ford, on west side of road, in root on east side of 4-foot water-oak tree; copper nail and washer	33	35	31.4	81	27	48.5	7,263
T road west to Aiken	33	34	38.9	81	28	37.0	6,711
Kitchings Mills post office, center of main road, in front of W. D. McNair's store	33	33	54.5	81	28	53.0	4,682
Pine Log Bridge over Edisto River, north end of	33	33	20.2	81	29	00.9	3,532
Crossroads	33	32	06.6	81	29	37.6	8,056
Crossroads at mail box	33	31	37.9	81	29	44.4	2,959
Sawmill, forks of road, in front of old house north of	33	39	38.4	81	26	20.1	
Fork of road, 1,650 feet north of negro's house	33	40	14.4	81	26	25.8	3,672
Mrs. Neva Effit's house, crossroads near	33	40	44.4	81	26	18.0	3,100
Crossroads at mail box 31	33	40	56.1	81	26	53.3	3,205
Crossroads at mail box	33	41	44.8	81	28	03.6	7,714
Beu'ah Gin Co.'s sawmill, 700 feet north of crossroads	33	42	06.6	81	28	29.0	3,076
W. K. Kitchen's house, forks at	33	42	40.5	81	29	46.1	7,361
Forks of road	33	42	49.8	81	29	54.9	1,192

Magnetic declination for west border of quadrangle, 0° 20′ E.

Along highways near south border of quadrangle. (By G. T. Hawkins in 1918.)

Crossroads at mail box	33	31	37.6	81	29	44.5	
Second-class road crossing	33	32	42.6	81	29	27.1	6,727
Road fork southeast, south of bridge	33	33	12.0	81	29	09.2	3,333
Forks of road	33	33	40.0	81	28	53.4	3,133
Kitchings Mills, forks of road at small house and barn	33	33	42.9	81	28	40.3	1,115
Forks of road, locust tree 150 feet southeast	33	33	37.6	81	27	47.6	4,487
Harriet Kitchings library, second-class crossroad	33	33	27.2	81	27	37.3	1,373
Southeast corner of large white church	33	32	48.6	81	26	23.6	7,354
Crossroads at painted house	33	32	42.7	81	25	53.9	2,582
Crossroads east of branch	33	32	02.8	81	24	38.1	7,580
Crossroads, 15 feet northwest to mail box	33	31	55.0	81	23	33.7	5,513
Forks of road at cabin	33	31	27.7	81	22	42.1	5,167
Crossroads, in front of big house	33	31	21.2	81	22	28.5	1,328
Crossroads at mail box	33	31	01.1	81	21	54.0	3,553
Springfield, 5 miles northwest of, 50 feet west of mi epost 5; iron post stamped "Prim. Trav. Sta. No. 54, 1918 H"	33	30	41.3	81	21	22.1	3,359
Crossroads, 150 feet southwest to house and red barn	33	30	47.2	81	19	34.6	9,129
Creek south	33	30	45.3	81	19	05.8	2,443
Second-class road, 300 feet north to shanty	33	30	36.0	81	18	16.2	4,309
Forks of road	33	30	21.6	81	17	42.5	3,201
Road crossing north of Springfield (Station 642=azimuth mark)	33	29	47.2	81	16	46.1	5,906

Magnetic declination near south border of quadrangle, 5′ E.

From Perry along Southern Ry. to Thor thence west to post 12. (By E. L. McNair in 1919.)

Wagener, "Prim. Trav. Sta. No. 56, 1918 H" (described on p. 713)	33	38	58.30	81	21	29.70	
Second-class road crossing	33	38	44.9	81	20	54.4	3,281
Road crossing	33	38	20.0	81	19	47.2	6,210
Road crossing	33	38	02.2	81	18	59.6	4,415
Public-road crossing	33	37	57.5	81	18	44.2	1,383
Road crossing	33	38	40.1	81	18	24.9	4,610
Road crossing	33	39	28.9	81	18	02.9	5,270
Public-road crossing	33	40	02.4	81	18	11.8	3,469
Intersection of railroad tangents	33	41	03.9	81	16	55.7	8,947
Public-road crossing	33	41	10.9	81	16	26.9	2,532
Public-road crossing	33	41	30.6	81	15	56.0	3,279
Thor station, 80 feet south of, 20 feet south of road crossing, 13 feet east of center of track, 5 feet southwest of crossing sign-post; iron post stamped "Prim. Trav. Sta. No. 12, 1919 Mac." Azimuth to switch stand at north end of Thor siding, 179° 01′ 20″	33	42	34.78	81	15	31.63	6,807
Second-class crossroad	33	42	21.8	81	16	12.2	3,667
Forks of road, junction with Charleston and Mount Willing road	33	42	06.8	81	16	35.4	2,480
Black Creek, center of bridge over	33	42	05.4	81	17	07.1	2,683
Forks of road	33	42	15.6	81	17	27.2	1,990
Forks of road	33	42	33.3	81	18	06.0	3,738
Crossroad	33	42	47.9	81	18	38.8	3,135
Creek crossing, no bridge	33	42	49.0	81	19	10.5	2,680
Forks of road, 75 feet southeast of mail box	33	43	17.8	81	19	45.4	4,146
Center of small creek crossing, no bridge	33	43	28.0	81	20	01.4	1,696

SEIVERN QUADRANGLE—Continued.

From Perry along Southern Ry. to Thor thence west to post 12—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Cedar tree 1 foot in diameter, at southwest corner of Alfred Gunter's tenant house	33	43	50.8	81	20	33.1	3,535
Small creek crossing, no bridge	33	44	03.3	81	20	45.4	1,638
Wagener, 7 miles north of, 1 mile northeast of crossing of Edisto River, on Wagener and Pelion road, about 18 feet east of crossroad, near Cash Fallon's house, road going west to Seivern; iron post stamped "Prim. Trav. Sta. No. 13, 1919, Mac." Azimuth to nail in oak tree, 500 feet distant, 193° 00′ 55″; to nail in root of stump in field, 802.5 feet distant, 113° 24′	33	44	08.95	81	21	10.68	2,210
Forks of road	33	44	18.8	81	21	38.1	2,524
Forks of road, junction with public road	33	44	42.7	81	22	36.1	5,452
Forks of road	33	44	14.7	81	22	55.6	3,276
Center of North Fork of Edisto River, at Merritt's bridge	33	43	37.2	81	23	23.9	4,477
Second-class crossroad	33	43	25.2	81	23	52.4	2,692
Road crossing on Southern Ry., north of Seivern station, at milepost 16	33	43	04.9	81	24	37.9	4,360
Seivern station, public-road crossing	33	42	46.9	81	24	49.4	2,062
Forks of road	33	42	50.4	81	25	12.7	2,000
Crossroad	33	42	38.0	81	26	09.2	4,937
T road south, 30 feet southwest to mail box	33	42	30.4	81	26	30.0	1,911
Forks of road	33	42	34.2	81	27	28.1	4,928
T road north	33	42	33.5	81	27	58.4	2,561
Public crossroads	33	42	12.0	81	28	39.0	4,060
Second-class crossroad	33	42	22.0	81	29	15.1	3,208
T road southerly	33	42	40.9	81	29	46.5	3,275
Crossroads	33	42	54.1	81	29	58.2	1,656

From Thor north along Southern Ry. to Pelion.

Thor, Prim. Trav. Sta. No. 12 (previously described)	33	42	34.78	81	15	31.63	.....
Center of track, at milepost 133	33	43	24.0	81	15	32.2	4,975
Thor, 1.5 miles north of, 60 feet south of road crossing, 15 feet west of center of track; iron post stamped "Elev. 373"	33	43	51.96	81	15	32.54	2,827
Road crossing	33	44	31.2	81	15	32.6	3,968

Magnetic declination for north half of quadrangle, 0° 08′ W.

From southeast corner of quadrangle north along east border. (By G. T. Hawkins in 1918.)

Springfield, 1 mile east of, forks of road	33	30	22.5	81	15	33.8	.....
T road east at milepost 3	33	31	41.0	81	15	10.9	8,169

From east border of quadrangle west to Wagener.

Crossroads	33	35	42.1	81	15	08.6	.....
Crossroads, 30 feet northwest to bridge	33	36	11.6	81	15	54.3	4,890
T road southwest along wire fence	33	36	48.3	81	16	55.3	6,349
Fork to west	33	37	25.8	81	17	45.7	5,703
Crossroads	33	37	44.2	81	18	10.3	2,789
Perry, 0.5 mile north of, crossing on main line	33	37	57.4	81	18	44.4	3,176
Crossroads	33	38	20.9	81	19	44.0	5,576
Second-class road at house	33	38	46.7	81	20	53.3	6,405
Wagener, 0.25 mile east of, 15 feet northwest of crossing; iron post stamped "Prim. Trav. Sta. No. 56, 1918 H"	33	38	58.30	81	21	29.70	3,293

From west border of quadrangle east to Wagener.

Fork	33	38	32.5	81	29	53.4	.....
Fork at schoolhouse	33	38	36.2	81	28	57.9	4,713
Crossroads	33	38	39.0	81	28	33.2	2,109
Fork to point 2,250 feet west of schoolhouse	33	38	52.6	81	26	54.2	8,479
Crossroads at house	33	38	53.9	81	26	19.4	2,948
Crossroads, 400 feet north to house	33	39	07.8	81	24	14.2	10,679
Wagener, 1.25 miles west of, forks	33	39	31.9	81	22	57.1	6,958
Wagener, just east of crossing, joint in north rail of main line	33	39	03.3	81	21	43.5	6,857
Wagener, "Prim. Trav. Sta. No. 56, 1918 H" (previously described)	33	38	58.3	81	21	29.7	1,272

Magnetic declination through center of quadrangle, 0° 01′ E.

SHIRLEY QUADRANGLE.

South along Seaboard Air Line Ry. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost 176	32	33	50.7	81	15	02.4	.....
South end of long trestle	32	33	18.2	81	15	07.0	3,315
Road crossing under railroad	32	32	39.3	81	15	12.6	3,960
Myers flag station, 135 feet north of road crossing, 15 feet east of center of track; iron post stamped "Prim. Trav. Sta. No. 80, 1917 Mac"	32	32	27.9	81	15	14.6	1,157
North end of long girder-trestle approach to Savannah River bridge	32	32	04.1	81	15	26.8	2,631
Savannah River, center of swing-span bridge, on Georgia and South Carolina State line	32	31	29.2	81	15	46.3	3,895

Only one observation for magnetic declination, 0° 0.3′ E.

Southeast along east bank of Savannah River. (By H. S. Senseney in 1918.)

Estill, 7 miles west of, 0.5 mile north of Blake Church, 15 feet west of road fork; iron post stamped "Prim. Trav. Sta. No. 4 S, 1918"	32	44	51.8	81	21	57.0	.....
Blake Church, in front of, center of road	32	44	25.6	81	21	48.5	2,749
Crossroads	32	43	59.3	81	21	39.6	2,760
Road fork	32	43	25.7	81	21	28.2	3,530
Center of road, in line with T road west to Hudsons Ferry, 25 feet north of signpost	32	42	29.5	81	20	55.7	6,327
T road east to sawmill	32	42	01.6	81	20	13.4	4,580
T road west at six mail boxes	32	41	56.6	81	20	05.8	820
Union Church, log railroad crossing	32	41	22.1	81	19	41.7	4,054
Road forks	32	41	06.2	81	19	38.1	1,635
Crossroads	32	40	33.6	81	19	31.1	3,350
Shirley, road fork at store	32	39	36.3	81	18	58.5	6,424
T road southwest, at two mail boxes	32	38	58.9	81	18	29.3	4,525
Crossroads, at two mail boxes	32	38	36.8	81	18	11.2	2,670
T road northeast at hedge fence	32	38	08.6	81	17	50.1	3,425
T road southwest near King Branch Church	32	37	16.6	81	16	59.6	6,798
Brighton, 45 feet south by 20 feet east of crossroads, U. S. Department of Agriculture iron post stamped "Elev. 72.5," Azimuth to lightning rod on south end of H. R. Kittels house is 184° 41′ 05"	32	36	45.3	81	16	26.5	4,245
Road fork	32	36	23.4	81	16	03.6	2,958
Crossroads	32	36	22.6	81	15	15.0	4,155
Garnett, Prim. Trav. Sta. No. 79, 1918, (previously listed)	32	36	21.0	81	14	42.3	2,799

Checked spur line southwest through center of quadrangle to Savannah River.

T road west to Hudsons Ferry	32	42	29.5	81	20	55.7	.....
Point where road passes through gate	32	42	08.4	81	21	29.7	3,610
Point where road passes through gate	32	41	44.3	81	21	53.7	3,182
Road forks, near old gate posts and blazed tree on west side of road	32	41	15.6	81	22	23.3	3,853
Center of road, at blazed tree on east side	32	40	53.1	81	22	43.5	2,854
Road forks, at blazed tree on west side	32	40	15.3	81	22	43.3	3,805
Road forks	32	40	08.0	81	22	42.9	741
Road forks	32	39	41.8	81	22	44.9	2,660
Martins Landing, 400 feet northeast of old storehouse, 12 feet south of Savannah River bank, 6 feet north of road; iron post stamped "Prim. Trav. Sta. No. 16 S, 1918"	32	38	56.5	81	23	41.9	6,685

Magnetic declination for center of quadrangle, 0.2° E.; for east part, 0.2° E

SUMMERVILLE QUADRANGLE.

Northeast along railroad. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Center of girder bridge	33	00	29.1	80	02	12.7	
Mount Holly station, road crossing 150 feet south of	33	01	53.1	80	02	02.7	8,535
Center of girder bridge	33	02	57.9	80	01	54.9	6,580
Public-road crossing	33	03	33.3	80	01	50.6	3,600
Strawberry station, 185 feet south of, 65 feet south of road, 40 feet east of center of north-bound track, 7 feet east of southeast corner of tool house; iron post stamped "Prim. Trav. Sta. No. 17, 1917 Mac." Azimuth of long railroad tangent south, sighting to top of hill at Mount Holly station, 5° 46′ 00″	33	05	26.8	80	01	36.6	11,527
Milepost Chn. 24	33	06	06.3	80	01	32.3	4,018
Center of iron-girder bridge	33	06	59.2	80	01	25.9	5,370
Oakley station, 75 feet north of, public-road crossing	33	07	27.5	80	01	22.5	2,876
Road crossing	33	08	51.4	80	01	12.4	8,524
Second-class road crossing	33	09	21.6	80	01	08.7	3,070
Road crossing at sawmill	33	10	03.9	80	00	57.4	4,375
Milepost Chn. 29	33	10	44.1	80	00	39.1	4,350
Monck's Corner station, 600 feet south of, 45 feet west of center of southbound track; iron post stamped "Prim. Trav. Sta. No. 18, 1917 Mac." Azimuth of railroad tangent from station looking north 1,800 feet, 200° 49′ 20″; to semaphore post on west side of track about 1 mile distant, 20° 29′ 00″; to semaphore post in front of station, 203° 15′ 30″, sighted just below targets	33	11	26.6	80	00	20.6	4,578
Monck's Corner station, street crossing	33	11	32.6	80	00	17.1	670
Second-class road crossing	33	11	53.4	80	00	07.7	2,250

Southeast along Southern Ry.

Summerville, five corners at West Main Street, at junction with Bacon's bridge road	33	00	24.7	80	11	15.5	
Southern Ry. station, across track from, directly opposite office window, 55 feet from center of main track, 100 feet N. 25° W. from Main Street crossing of Southern Ry., approximately 50 feet northwest of center line of Main Street going northeast; iron post stamped "Prim. Trav. Sta. No. 57, 1917 Mac."	33	01	13.4	80	10	30.2	6,257
Road crossing	33	00	50.6	80	09	48.8	4,203
Lincolnville flag station, road crossing at	33	00	33.1	80	09	16.2	3,290
Public-road crossing	33	00	04.1	80	08	22.0	5,465

Along highways.

T road, junction with Charleston and Moncks Corner road	33	00	12.8	80	02	34.4	
Road fork	33	00	35.6	80	02	46.8	2,543
Road fork	33	01	53.6	80	02	18.7	8,230
Public-road crossing at Mount Holly	33	01	53.1	80	02	02.7	1,360

Northwest along Southern Ry. in southwest corner of quadrangle.

Public-road crossing	33	01	46.1	80	11	32.2	
Drainland, center of track, opposite shelter station, 100 feet southeast of switch stand	33	02	35.0	80	13	02.7	9,155
Private-road crossing	33	02	56.0	80	13	41.8	3,940
Jedburg flag station, about 4 feet in rear of shelter station, about in line with telegraph poles, on northeast side of track; iron post stamped "Prim. Trav. Sta. No. 60, 1917 Mac."	33	03	18.1	80	14	22.2	4,099

West from Oakley station along highways through center of quadrangle.

Forks of road, 50 feet northwest of gate across road	33	07	52.1	80	02	28.2	
Crossing of roadbed of abandoned tramroad	33	08	07.7	80	02	55.2	2,783
Forks of road, about 70 feet south of second-class road	33	08	26.8	80	03	48.1	4,892
T road N. 70° W.	33	09	10.9	80	03	34.8	4,604
Crossing of lumber company's railroad	33	09	28.5	80	04	20.2	4,245
Forks of road	33	09	27.9	80	05	12.5	4,446
Forks of road, second-class road southerly	33	08	56.2	80	07	20.9	11,384
T road south	33	08	47.0	80	07	54.0	2,960
T road north	33	08	37.6	80	08	27.5	3,000
Summerville, 10 miles north of, on State road, at junction with road going east to Oakley, 15 feet west of center of road, in line with road running N. 62° E., 0.5 mile southeast of store; iron post stamped "Prim. Trav. Sta. No. 58, 1917 Mac."	33	08	14.4	80	09	14.2	4,612

SUMMERVILLE QUADRANGLE—Continued.

West from Oakley station along highways through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road northeast to Monck's Corner, at Longridge store, road south is 50 feet southeast	33 08 32.2	80 09 39.0	2,774
Center of southerly one of three bridges	33 08 58.5	80 10 27.1	4,876
T road southwest, 10 miles to Ridgeville	33 09 25.9	80 11 02.6	4,096
Angle of 56° in road, about 80 feet southwest of bridge	33 08 57.3	80 11 25.8	3,493
Road forks, private road to house	33 08 28.6	80 11 55.2	3,828
T road northwesterly	33 07 54.5	80 12 32.4	4,676
Forks of road	33 07 40.9	80 13 00.2	2,735
T road northwest	33 07 28.8	80 13 29.1	2,743
Forks of road	33 07 22.1	80 14 09.1	3,469

Northwest along highways in northwest corner of quadrangle.

Crossroad	33 10 25.3	80 12 25.8	.....
Small sluiceway bridge	33 12 00.6	80 14 43.3	15,138
Private road southwest, through gate	33 12 10.3	80 14 57.0	1,520

Southeast along highways in northeast corner of quadrangle.

Angle of 13° in road, 215 feet north of crossing of tramroad	33 14 21.6	80 02 11.7	.....
Pinopolis graded school, about 0.6 mile north of, between forks of road and about 80 feet north of junction; iron post stamped "Prim. Trav. Sta. No. 69, 1917 Mac." Azimuth to nail in root of pine tree 8 feet west of road, 18 inches from trunk, 10° 23′.	33 14 08.9	80 02 06.3	1,371
Forks of road, about 850 feet south of church, 100 feet south of gin	33 13 24.3	80 02 18.8	4,634
Forks of road, at north end of triangle, 400 feet north of church	33 12 41.3	80 02 35.0	4,554
Angle of 20° in road, at junction of two long stretches	33 12 13.9	80 02 04.1	3,814
Forks of road	33 11 54.6	80 01 10.2	4,984
Monck's Corner, Prim. Trav. Sta. No. 18 (previously described)	33 11 26.6	80 00 20.6	5,069

Northeast along highways in northwest corner of quadrangle. (By E. L. McNair in 1917.)

Small road bridge	33 13 08.7	80 14 21.1	.....
Forks of road	33 13 24.0	80 13 59.0	2,429
Crossroad	33 14 05.4	80 12 51.8	7,085
Forks of road at corner of field and 10 feet west of small bridge	33 14 41.6	80 12 05.0	5,400

Magnetic declination southeast along Southern Ry., 0.9° W.; west through center of quadrangle, 0.8° W.; in northeast corner, 1.0° W.

From Eutaw Springs east along Moncks Corner road to Pinopolis.

Road fork	33 14 22.6	80 02 11.8	.....
Prim. Trav. Sta. No. 69 Mac. 1917 (previously described)	33 14 08.86	80 02 06.26	1,470

SUMTER QUADRANGLE.

Northwest along Atlantic Coast Line R. R. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing at Brogden, 100 feet north of depot	33 48 35.6	80 15 35.4	.....
Road crossing at Elev. 146	33 50 17.2	80 16 50.7	12,079
U. S. permanent bench mark, north side of track	33 51 07.4	80 17 27.7	5,957
Road crossing	33 51 16.1	80 17 34.3	1,034
Road crossing	33 52 06.9	80 18 11.9	6,030
Road crossing at Elev. 146	33 52 52.0	80 18 45.3	5,368
Road crossing at Elev. 144	33 53 19.8	80 19 06.0	3,310
Road crossing	33 54 19.4	80 19 50.1	7,080
Sumter, 300 feet west of depot, at southwest corner of railroad park, 5 feet east of street curb, 6 feet north of railroad track; iron post stamped "Prim. Trav. Sta. No. 47, J 1918. Elev. 169 feet"	33 54 54.9	80 20 24.4	4,598

SUMTER QUADRANGLE—Continued.

Along highways from New Zion to Sumter.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road forks	33	54	13.0	80	15	11.1	.....
Road forks	33	54	40.3	80	16	09.1	5,616
Center of bridge over ditch	33	54	58.7	80	16	51.4	4,021
Road forks	33	54	55.7	80	17	27.6	3,070
Road forks	33	54	52.2	80	19	01.0	7,880
Crossroads	33	54	51.1	80	19	27.9	2,271
Crossing on Atlantic Coast Line R. R.	33	55	14.3	80	19	48.1	2,896

From Sumter northeast along Atlantic Coast Line R. R. to post 51.

Second-class road crossing	33	56	00.9	80	18	23.4	.....
Second-class road crossing	33	56	28.2	80	17	33.6	5,021
Public-road crossing	33	57	02.4	80	16	31.4	6,280
Second-class road crossing	33	57	50.8	80	15	03.2	8,889

From primary traverse station 51 west along highway near north border of quadrangle.

Crossroads	33	58	51.9	80	15	16.4	.....
T road south	33	58	53.3	80	15	57.5	3,460
Crossroads	33	58	55.3	80	16	56.1	4,945
Center of bridge	33	58	48.4	80	17	16.3	1,836
Crossroads	33	58	45.9	80	17	51.8	2,995
Crossing on Atlantic Coast Line R. R.	33	58	48.6	80	18	14.0	1,898
Center of bridge	33	59	02.0	80	19	04.0	4,417
Center of bridge over mill race	33	59	01.8	80	19	24.5	1,728
Crossroads at church and store	33	58	56.2	80	19	42.3	1,603
Crossroads	33	59	21.3	80	20	42.2	5,650
Crossing on Seaboard Air Line Ry	33	59	23.7	80	21	06.4	2,051
T road south	33	59	13.9	80	21	48.8	3,702
Crossroads at three mail boxes	33	59	30.3	80	22	35.2	4,242
Road forks	33	59	37.1	80	23	21.1	3,928
Delzell, 2 miles southeast of, west side of road, in line with T road east, 130 feet north of milepost 7	33	59	44.3	80	24	19.0	4,929
Crossroads	33	59	36.3	80	29	54.3	.....

On south edge of quadrangle.

Five corners at cotton gin	33	45	01.00	80	19	00.5	.....

From Sumter west along Atlantic Coast Line R. R. to Wedgefield.

Road crossing	33	54	39.7	80	21	19.2	.....
Road crossing	33	54	30.6	80	22	51.3	7,810
Milepost 40, U. S. permanent bench mark. Elev. 183	33	54	25.5	80	23	41.2	4,243
Road crossing	33	54	21.0	80	24	27.9	3,958
Road crossing	33	54	15.3	80	25	26.0	4,930
Road crossing	33	54	09.4	80	26	24.7	4,980
Cane Savannah, on east side of public road, 5 feet north of crossing signpost; iron post stamped "Prim. Trav. Sta. No. 57, J 1918. Elev. 183"	33	54	06.2	80	26	59.2	2,925
Center of trestle	33	54	01.8	80	27	30.4	2,666
Road crossing	33	53	48.2	80	29	09.2	8,445
Road crossing	33	53	43.5	80	29	42.9	2,880

Magnetic declination for east border of quadrangle, 01° 00′ 00″ W.; for north border, 00° 47′ 17″ W.; for west border, 00° 33′ 19″ W.; for south border, 00° 25′ 22″ W.

SUMTER QUADRANGLE—Continued.

From south border of quadrangle northeast along Atlantic Coast Line R. R. to Sumter. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	33	45	33.1	80	27	04.6	
Road crossing	33	45	56.5	80	26	50.6	2,640
Road crossing	33	46	16.5	80	26	38.6	2,260
Road crossing	33	46	58.0	80	26	13.8	4,690
Road crossing	33	47	36.4	80	25	50.9	4,331
Road crossing	33	48	00.5	80	25	36.5	2,720
Road crossing	33	48	28.9	80	25	19.5	3,210
Road crossing	33	49	05.1	80	24	57.9	4,090
Private-road crossing	33	49	53.6	80	24	28.9	5,480
Road crossing	33	50	12.8	80	24	17.4	2,170
Road crossing	33	51	21.0	80	23	36.7	7,700
Road crossing	33	51	43.6	80	23	23.1	2,550
Road crossing	33	52	04.8	80	23	10.4	2,389
Road crossing	33	52	18.1	80	23	02.4	1,510
Road crossing	33	53	02.2	80	22	36.0	4,980
North end of tangent, angle at; iron bolt with cross in center of track	33	53	07.0	80	22	33.1	540
Road crossing	33	53	39.8	80	22	06.0	4,027
South end of trestle	33	54	01.7	80	21	40.4	3,085
Sumter, Prim. Trav. Sta. No. 47 (previously described)	33	54	54.86	80	20	24.36	8,360

Magnetic declination for south border of quadrangle, 0° 43′ W.

TALATHA QUADRANGLE.

Along highways near north border of quadrangle. (By B. H. Yoakum in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Windsor, 0.5 mile northwest of, road fork	33	29	10.0	81	30	58.5	
Windsor, Prim. Trav. Sta. No. 94 (previously described)	33	28	48.6	81	30	44.2	2,472

Along Southern Ry. near north border of quadrangle. (By E. L. McNair in 1918.)

Road crossing	33	27	59.4	81	30	05.1	3,761
Road crossing, 30 feet southeast of switchstand	33	28	28.7	81	30	27.4	3,510
Windsor station, 400 feet southeast of, 20 feet southwest from center of railroad track, in line with rear end and 67 feet from corner of Hallman Bros.' store; iron post stamped "Prim. Trav. Sta. No. 94, 1918 Mac."	33	28	48.6	81	30	44.2	2,458
Road crossing	33	29	27.4	81	31	26.5	5,310

Along highways near west border of quadrangle. (By B. H. Yoakum in 1918.)

Road forks	33	28	57.6	81	41	44.2	
Road forks	33	27	53.9	81	41	43.0	6,435
T road west	33	26	39.2	81	41	12.0	7,985
Crossroads	33	26	11.2	81	41	10.3	2,836
T road west	33	25	13.9	81	41	30.4	6,038
Road forks	33	24	19.6	81	41	08.7	5,781
Talatha, 1 mile southeast of, at A. T. Johnson's store, 20 feet south and 15 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 15, 1918 Y"	33	23	30.2	81	41	06.6	4,993
Crossroads	33	22	38.3	81	41	05.9	5,240
Crossroads	33	21	45.9	81	41	07.7	5,294
Holley's store, center of road in front of	33	20	42.5	81	41	32.4	6,745
Hawthorn post office, 900 feet northwest of, crossroads	33	19	51.4	81	41	54.4	5,491
Center of road, in front of cotton gin	33	19	12.7	81	42	40.1	5,500
Center of small bridge	33	19	00.5	81	42	52.1	1,600
Private-road forks	33	18	04.3	81	43	37.7	6,868
Private T road	33	17	11.8	81	43	46.4	
Road forks	33	16	08.5	81	44	33.5	7,540
T road west	33	15	32.9	81	44	43.1	3,684

TALATHA QUADRANGLE—Continued.

Along highway through center of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Talatha post office, 50 feet southwest of, crossroads	33 23 43.6	81 42 15.9	.....
Private crossroads	33 23 36.0	81 43 45.2	7,604
Crossroads	33 23 44.3	81 44 43.9	5,046
T road north	33 19 51.2	81 31 48.6	.....
Road forks	33 19 26.4	81 32 47.8	5,612
Crossroads	33 19 29.3	81 34 03.2	6,391
T road north	33 19 45.6	81 34 59.2	5,021
Mossy School, road forks southwest at	33 20 09.5	81 36 18.9	7,167
Mossy School, 1.3 miles northwest of, 0.7 mile east of Tyler's bridge, 50 feet southeast of crossroads; iron post stamped "Prim. Trav. Sta. No. 20, 1918 Y"	33 20 56.7	81 37 11.4	6,519
Crossroads	33 21 19.4	81 38 54.3	9,012
Road forks	33 21 27.0	81 39 48.0	4,613

Along highways near south border of quadrangle.

Private T road	33 17 17.2	81 42 07.6	.....
Crossroads	33 16 50.2	81 41 00.1	6,340
T road	33 16 59.0	81 39 25.9	8,044
Crossroads	33 17 05.6	81 38 11.4	6,362
Dunbarton, 7 miles northwest of, at old Greenland post office, on north side of road, opposite southeast corner of store; iron post stamped "Prim. Trav. Sta. No. 17, 1918 Y"	33 17 02.4	81 37 10.5	5,176
West Fork of T road north	33 17 03.1	81 36 14.9	4,720
T road south	33 16 42.9	81 35 30.0	4,324
Crossroads	33 16 12.7	81 34 24.4	6,345
T road north	33 16 01.4	81 33 19.2	5,648
Center of bridge over Joyce's Branch	33 15 54.1	81 32 26.2	4,553
Tramroad crossing	33 15 38.3	81 31 16.3	6,144
Road forks	33 15 17.0	81 30 19.8	5,254

Along highways near east border of quadrangle.

Garley's Mill, 1 mile east of, at residence of George Green, 22 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 18, 1918 Y"	33 18 04.2	81 30 11.0	.....
Tramroad crossing	33 18 17.2	81 30 52.8	3,782
T road west	33 19 53.3	81 30 09.8	.....

Near Windsor. (By G. T. Hawkins in 1918.)

Windsor, Prim. Trav. Sta. No. 94, 1917 Mac. (previously described)	33 28 48.6	81 30 44.2	.....
Farm-road crossing, at mail box	33 29 42.1	81 30 50.6	5,430

Magnetic declination for west border of quadrangle, 0° 30′ E.; for south border, 0° 27′ E.; for east border, 0° 34′ E.; for center, 0° 24′ E.

TIMMONSVILLE QUADRANGLE.

Along highways near south border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads, 200 feet west of mail box	34 00 06.8	79 57 14.5	.....
Hudson Bridge, crossroads 1 mile south of	34 00 35.1	79 57 08.0	2,914
Center of bridge	34 00 16.1	79 56 38.7	3,124
Alcolu R. R., crossing on	34 00 32.4	79 52 16.3	.....
Jones crossroads, 40 feet northwest of crossing; iron post stamped "Prim. Trav. Sta. No. 42"	34 01 04.9	79 50 48.2	4,043
Road fork southwest	34 00 30.8	79 49 47.1	6,192
T road west	34 00 19.0	79 48 45.1	5,351
Lynch River, south end of bridge over	34 00 04.3	79 48 37.3	1,631
Crossroads	34 00 12.9	79 46 29.1	.....
Syrup mill, road fork at	34 00 40.6	79 46 09.5	3,243
Newhope, center of road crossing on Atlantic Coast Line R. R.; nail in tie	34 01 03.4	79 45 02.5	6,094
Road crossing	34 00 25.2	79 45 00.1	3,860

Magnetic declination for south border of quadrangle, 1° 20′ W.

TRIO QUADRANGLE.

Southwest along Seaboard Air Line Ry. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Second-class road crossing	33	28	50.1	79	41	47.8	6,458
Crossing of unused road	33	28	31.9	79	40	31.8	6,695
Road crossing	33	28	14.8	79	39	20.4	6,285
Public-road crossing	33	27	57.7	79	38	08.9	6,300
Second-class road crossing	33	27	45.3	79	37	17.0	4,750
Second-class road crossing	33	27	34.4	79	36	31.5	4,015
Milepost 19	33	27	24.0	79	35	48.2	3,815
West Andrews, road crossing	33	27	09.9	79	34	49.6	5,165
Milepost 17, street crossing	33	26	55.0	79	33	47.9	5,435
Andrews station, intersection of two lines of the Seaboard Air Line Ry.	33	26	49.1	79	33	23.3	2,168
Andrews station, 420 feet north of intersection of railroads at, 30 feet west of center of Seaboard Air Line Ry. track, 10 feet southwest of sidewalk, 8 feet west of telephone pole; iron post stamped "Prim. Trav. Sta. No. 23, 1917 Mac." Azimuth to railroad water tank, 319° 24′; to church steeple, 153° 15′	33	26	53.3	79	33	23.0	420
Road crossing	33	26	35.8	79	33	25.6	1,778
Road crossing	33	26	03.2	79	33	53.7	4,075
Public-road crossing	33	24	51.1	79	34	55.7	8,980
Milepost 116	33	23	39.1	79	35	57.6	8,970
Switch stand at turnout	33	23	03.7	79	36	28.2	4,415
Milepost 118	33	22	14.4	79	37	10.5	6,145
Oceda flag station, road crossing at	33	21	04.2	79	38	10.8	8,745
Oceda flag station, 180 feet south of road crossing at, 25 feet west of center of track, on bank, 3 feet east of telephone pole; iron post stamped "Prim. Trav. Sta. No. 24, 1917 Mac." Azimuth of railroad tangent, 35° 45′	33	21	02.9	79	38	12.2	177
South end of trestle	33	20	38.7	79	38	32.6	3,000
Milepost 121	33	20	07.1	79	38	59.8	3,940
Milepost 122	33	19	24.7	79	39	36.2	5,280
Santee River bridge, south end of trestle approach to	33	18	59.2	79	39	58.1	3,170
Santee River, center of swing span, over	33	18	16.0	79	40	35.1	5,375
Second-class road crossing	33	17	36.9	79	41	08.7	4,875
Jamestown flag station, about 100 feet west and 55 feet south of road crossing at, 50 feet northwest of center of track, at edge of right of way; iron post stamped "Prim. Trav. Sta. No. 25, 1917 Mac." Azimuth of railroad tangent, 35° 45′	33	17	07.56	79	41	34.6	3,691
Switch block at turnout, on railroad of Atlantic Coast Line Corp. (Lumber company.)	33	16	15.7	79	42	18.4	6,423

Southeast along railroad.

Second-class road crossing, near brick yard	33	29	28.6	79	44	29.2	.....
Opposite milepost Geo. 27	33	29	19.0	79	43	49.2	3,520
Trio station, directly opposite office window of and across railway from, 30 feet south of center of track, just outside line of telephone poles; iron post stamped "Prim. Trav. Sta. No. 22, 1917 Mac." Azimuth of railroad tangent, 285° 53′	33	29	07.3	79	43	01.2	4,233

West and north along highways through center of quadrangle. (By Oscar Jones in 1917.)

Summers Creek, center of bridge over	33	21	18.5	79	30	08.3	.....
Center of road, opposite house and gate	33	20	54.6	79	31	23.1	6,789
Center of road, opposite W. P. Blake's mail box	33	20	54.1	79	31	46.3	1,970
Center of road, opposite house and gate	33	20	49.8	79	32	22.6	3,109
Crossroad north	33	20	23.0	79	33	08.1	4,719
Road fork	33	19	59.2	79	33	48.8	4,210
Crossroad north	33	19	45.8	79	34	10.6	2,290
Road fork of Santee River road	33	19	34.1	79	34	30.6	2,072
Center of bridge over ditch	33	19	44.4	79	35	35.4	5,594
Road fork	33	19	47.7	79	35	56.3	1,805
Road fork	33	20	03.5	79	36	26.8	3,037
Road fork	33	20	27.3	79	37	00.7	3,759
Road fork	33	20	44.7	79	37	29.2	2,986
Oceda, road crossing at, center of track	33	21	04.2	79	38	10.8	4,040
Side shot to Prim. Trav. Sta. No. 24, Mac	33	21	02.9	79	38	12.2	(180)
Road fork, county-line road at Cedar Creek Church	33	21	37.5	79	39	12.1	6,199
Road forks	33	21	26.4	79	40	24.2	6,220
Road forks	33	21	24.5	79	41	04.1	3,390
Road fork to Leuneuds Ferry	33	21	28.7	79	41	59.6	4,722
Road fork	33	21	45.8	79	42	22.0	2,568
Road fork through gate	33	22	13.4	79	43	03.5	4,490

TRIO QUADRANGLE—Continued.

West and north along highways through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Center of bridge over creek	33 22 25.3	79 43 14.2	1,510
Center of bridge over creek	33 23 02.1	79 43 38.9	4,274
Center of bridge over creek	33 23 30.0	79 44 17.1	4,292
Crossroad north, near E. L. Garrison's mail box, 1 mile west of Sutton post office	33 24 05.0	79 45 31.9	7,262
Center of road, opposite schoolhouse	33 24 33.0	79 45 16.7	3,110
Road fork	33 25 09.6	79 44 57.0	4,059
Road fork	33 25 31.7	79 44 55.7	2,235
Road fork	33 26 36.7	79 44 50.0	6,588
Road fork	33 26 57.4	79 44 48.0	2,095
Crossroads	33 27 48.1	79 45 04.3	5,309
Center of road, opposite tree marked "U. S."	33 28 17.2	79 44 17.9	4,906
Crossroad north	33 28 31.4	79 43 40.0	3,520
Trio station, Prim. Trav. Sta. No. 22 (previously described)	33 29 07.3	79 43 01.2	4,902

Northwest along Seaboard Air Line Ry.

Road crossing	33 26 01.1	79 30 04.7	.....
Road crossing	33 26 16.3	79 31 07.3	5,520
Center of track, opposite milepost 15	33 26 25.9	79 31 47.1	3,510
Point of switch	33 26 31.3	79 32 09.2	1,950
Track opposite milepost 16	33 26 40.6	79 32 47.7	3,390
Andrews station (junction with McNair's line)	33 26 49.2	79 33 23.3	3,140

Southeast along highways in southwest corner of quadrangle. (By Oscar Jones in 1917.)

Jamestown, "Prim. Trav. Sta. No. 25 Mac."	33 17 07.6	79 41 34.6	.....
Road fork	33 16 56.1	79 40 53.9	3,649
Center of road, opposite house and two mail boxes	33 16 10.8	79 40 09.8	5,911
Crossroads	33 16 01.0	79 39 53.0	1,737
Road fork at church and schoolhouse	33 15 41.7	79 39 31.4	2,668
Center of bridge over creek	33 15 38.0	79 39 28.8	441
Center of road, opposite stone house	33 15 12.2	79 38 49.5	4,234

Magnetic declination for southwest part of quadrangle, 1° 00′ W.

From north border of quadrangle south along highways. (By Oscar Jones in 1918.)

Center of bridge	33 29 48.9	79 32 14.0	.....
Road fork, road to Warsaw at	32 29 38.3	79 32 30.0	1,725
Potato Ferry, north end of bridge over Black River	33 29 13.7	79 32 40.4	2,643
Seaboard Air Line Ry. crossing	33 28 42.9	79 33 11.1	4,059
South end of trestle	33 28 21.5	79 33 13.2	2,172
Center of trestle	33 27 57.4	79 33 15.8	2,438
Road crossing	33 27 08.0	79 33 20.9	5,021
Andrews, railroad crossing	33 26 49.2	79 33 23.3	1,912
Andrews, iron post stamped "Prim. Trav. Sta. No. 23, 1917 Mac."	33 26 53.3	79 33 23.0	420

Magnetic declination for north border of quadrangle, 1° 55′ W.

South along highways.

Schoolhouse, road fork at	33 29 24.5	79 42 50.1	.....
Trio station, Prim. Trav. Sta. No. 22 (previously described)	33 29 07.3	79 43 01.2	1,973

VARNVILLE QUADRANGLE.

Northwest along Charleston & Western Carolina Ry. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	32	47	40.0	81	00	00.5	
Road crossing	32	48	05.7	81	00	37.5	4,090
Second-class road crossing	32	48	23.8	81	01	03.5	2,875
Milepost 74	32	48	41.5	81	01	28.9	2,810
Public-road crossing	32	49	02.9	81	01	59.7	3,400
Milepost 73	32	49	18.0	81	02	21.4	2,405
Road crossing	32	49	48.2	81	03	04.8	4,790
Road crossing	32	50	37.4	81	04	15.7	7,835
Varnville station, public-street crossing	32	51	00.6	81	04	49.0	3,685
Road crossing	32	51	09.6	81	05	01.9	1,425
Road crossing	32	51	34.5	81	05	37.8	3,960
Hampton station, about 900 feet northwest of, 40 feet southwest of Charleston & Western Carolina Ry. track, 60 feet west of road crossing, in line with fence on northwest side of street; iron post stamped "Prim Trav. Sta. No. 75, 1917 Mac." Azimuth to left corner of brick public-school building, about 1,000 feet distant, 99° 20′ 15″	32	52	08.2	81	06	27.1	5,414
Public-road crossing	32	52	30.1	81	06	57.9	3,430
Public-road crossing	32	52	46.9	81	07	22.2	2,685
Road crossing	32	53	31.3	81	08	26.1	7,050
Road crossing	32	53	51.2	81	08	54.8	3,175
Road crossing	32	54	23.7	81	09	41.6	5,160
Road crossing	32	55	06.5	81	10	43.3	6,815
Brunson station, about 100 feet north of street crossing	32	55	31.3	81	11	19.1	3,945
Second-class road crossing	32	56	04.5	81	12	07.0	5,290
Second-class road crossing	32	56	30.9	81	12	45.0	4,190
Road crossing	32	57	16.2	81	13	50.5	7,220
Fairfax station, 150 feet south of, 32 feet west, and 6 feet south of crossing of Charleston & Western Carolina Ry. with Seaboard Air Line Ry.; iron post stamped "Prim. Trav. Sta. No. 76, 1917, Mac." Azimuth to outlet pipe of Standard Oil Co's. tank, 570 feet distant, 298° 48′ 15″, sighted below letters "I A"	32	57	31.7	81	14	13.3	2,498
Public-road crossing	32	57	59.1	81	14	52.4	4,324

South along Seaboard Air Line Ry.

Fairfax station, iron post No. 76 near crossing of Seaboard Air Line and Charleston & Western Carolina railroads (described above)	32	57	31.7	81	14	13.3	
Road crossing	32	57	07.4	81	14	13.5	2,460
Road crossing	32	56	24.7	81	14	14.4	4,320
Public-road crossing, near sawmill	32	55	15.1	81	14	15.8	7,035
Creek, road crossing, another channel about 120 feet south	32	54	25.8	81	14	16.9	4,985
Public-road crossing	32	53	51.2	81	14	17.7	3,495
Milepost 198	32	52	56.4	81	14	18.9	5,535
Road crossing	32	52	13.8	81	14	19.9	4,315
Gifford station, about 190 feet south of, 105 feet north of main public-road crossing, 25 feet west of center of track; iron post stamped "Prim. Trav. Sta. No. 77, 1917, Mac."	32	51	33.5	81	14	21.1	4,074
Milepost 196	32	51	11.9	81	14	21.3	2,175
Milepost 195	32	50	19.7	81	14	22.6	5,280
Second-class road crossing	32	49	39.4	81	14	23.6	4,080
Road crossing	32	49	02.9	81	14	24.5	3,690
Luray station, 400 feet south of road crossing	32	48	46.6	81	14	24.9	1,645
Road crossing	32	48	08.6	81	14	25.9	3,840
Railroad crossing, Southern Ry. and Seaboard Air Line Ry	32	46	57.8	81	14	27.7	7,155
Road crossing	32	45	49.4	81	14	29.3	6,915
Estill station, directly opposite and across track from, 40 feet east of center track, 170 feet south of city water tower, in open park grounds; iron post stamped "Prim. Trav. Sta. No. 78, 1917 Mac." Azimuth to metal fixture on top of Mrs. Marvin O'Neal's house, 118° 58′ 30″	32	45	16.1	81	14	29.6	3,363

Only two observations for magnetic declination, 0° 0.2′ E. and 0° 0.1′ W.

From Hampton northeast along Hampton & Branchville R. R. to Moselle. (By H. S. Senseney in 1917–18.)

Hampton, Prim. Trav. Sta. 75 (previously described)	32	52	08.2	81	06	27.1	
Road crossing, 1,665 feet northeast of milepost 1	32	52	58.6	81	05	58.5	5,649
Road crossing	32	53	46.0	81	05	18.3	5,885
Crocketville, road crossing at station	32	54	47.7	81	04	25.6	7,695
Road crossing	32	55	03.0	81	04	12.1	1,920

VARNVILLE QUADRANGLE—Continued.

From Hampton northeast along Hampton & Branchville R. R. to Moselle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Milepost 5	32	55	34.3	81	03	44.4	3,950
Old road crossing, gate east	32	55	54.1	81	03	26.4	2,527
Road crossing	32	56	28.2	81	02	33.1	5,700
Miley, road crossing at	32	56	51.9	81	01	56.3	3,950
Moselle, road crossing at	32	57	57.3	81	00	46.6	8,891
Moselle, 65 feet south of railroad crossing; iron post stamped "Prim. Trav. Sta. No. 1 S., 1917." Azimuth to center of chimney of J. S. Saunders's store, 319° 30′ 20″	32	57	56.7	81	00	46.6	67
Along highways near east border of quadrangle.							
Crossroads	32	53	53.9	81	00	16.1	.....
Road fork	32	48	11.2	81	00	31.1	.....
Railroad crossing, near milepost 75	32	48	05.7	81	00	37.5	780
Southwest along highways in southeast corner of quadrangle.							
Crossroads	32	46	24.7	81	00	08.7	.....
Road forks	32	46	12.0	81	00	23.2	1,790
Crossroads	32	46	09.0	81	00	35.5	1,092
East end of bridge at Lowndes Lake	32	45	38.9	81	01	14.2	4,491
Lane through gate	32	45	17.9	81	01	53.9	3,999
Road through gate	32	45	00.8	81	02	19.1	2,762

Magnetic declination through south border of quadrangle, 0.1° E.

Northwest along highways in southwest corner of quadrangle.

T road north	32	45	05.8	81	12	05.6	.....
Crossroad	32	45	10.1	81	12	37.7	2,777
Lena, railroad crossing at depot, center of west track	32	45	12.0	81	12	53.4	1,355
Estill, at east end of road forks	32	45	17.5	81	13	54.8	5,276
Estill station, Prim. Trav. Sta. No. 28 (previously described)	33	45	16.1	81	14	29.6	2,972
Northwest along highways in northeast corner of quadrangle. (By H. S. Senseney in 1918.)							
Road forks	32	59	26.3	81	00	16.1	.....
Road forks, at blazed pine tree	32	59	27.7	81	00	35.9	1,695
Crossroads	32	59	38.8	81	01	13.2	3,365

Magnetic declination for quadrangle, 0.2° E.

West along highways near north border of quadrangle. (By H. S. Senseney in 1917-18.)

Moselle station, road crossing at	32	57	57.3	81	00	46.6	.....
T road east	32	58	35.8	81	01	11.7	4,433
T road east	32	59	00.6	81	01	15.0	2,526
Road forks	32	59	18.9	81	01	03.9	2,077
Crossroads	32	59	38.8	81	01	13.2	2,162
Second-class crossroad	32	59	44.5	81	02	15.8	5,370
T road north, at mail box	32	59	51.8	81	03	03.0	4,084
Broxton, west end of most westerly of several bridges	32	59	37.8	81	03	26.5	2,456
Road forks	32	59	34.2	81	03	51.3	2,139
Road forks, in front of negro house	32	59	34.7	81	04	01.2	850
T road east	32	59	18.9	81	04	29.9	2,921
Road forks	32	58	35.8	81	04	53.6	4,802
Crossroads	32	58	32.4	81	05	37.7	3,768
Road fork	32	58	30.9	81	05	51.2	1,164
Crossroads	32	58	24.2	81	06	31.4	3,492
Hickory Grove Church, road fork at railroad crossing 250 feet southeast of	32	58	41.2	81	06	38.6	1,820
Hickory Grove Church, 0.75 mile north of, 20 feet south by 15 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 4 S, 1918"	32	59	12.6	81	06	58.9	3,615
Road fork	32	59	03.6	81	07	06.8	1,127
T road north	32	59	03.9	81	08	04.5	4,914
T road north at store	32	59	06.4	81	08	18.4	1,206

VARNVILLE QUADRANGLE—Continued.

West along highways near north border of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Jackson Branch, north end of bridge over	32 58 35.8	81 09 17.5	5,913
Crossroads	32 58 14.2	81 09 26.5	2,313
Hampton and Barnwell county line, fence line north at	32 58 36.1	81 10 33.4	6,116
Crossroads	32 58 45.5	81 10 53.4	1,956
Road fork	32 59 35.6	81 11 54.9	7,283
Crossroads	32 59 54.2	81 12 05.8	2,093
North along Seaboard Air Line Ry. (By E. L. McNair in 1917-18.)			
Fairfax, Prim. Trav. Sta. 76 (previously described)	32 57 31.7	81 14 13.3	.....
Road crossing	32 57 59.7	81 14 12.4	2,823
Intersection of two long railroad tangents at angle of 10°	32 58 25.6	81 14 11.8	2,620
Milepost 205	32 59 01.4	81 14 03.5	3,685
Public-road crossing	32 59 49.1	81 13 52.6	4,910
By H. S. Senseney in 1918.			
Crossroads	32 52 02.4	81 14 54.9	.....
Gifford, Prim. Trav. Sta. No. 77, 1917 Mac	32 51 33.4	81 14 21.1	4,108

WADMELAW ISLAND QUADRANGLE (northeast quarter is Legareville 7½′ quadrangle; southeast quarter is Kiawah Island 7½′ quadrangle).

Spur line along Atlantic Coast Line R. R. south to Yonges Island. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Ravenel station, 65 feet N. 80° W. from northwest corner of station platform, 70 feet north of center of main track, 70 feet north and 50 feet west of public-road crossing; iron post stamped "Prim. Trav. Sta. No. 12, 1917 Mac." Azimuth of long railroad tangent west, 82° 36′ 30″	32 45 52.6	80 14 25.8	.....
Second-class road crossing	32 44 51.3	80 14 36.1	6,255
Public-road crossing	32 44 03.6	80 14 30.1	4,850
Road crossing	32 43 41.4	80 14 27.3	2,250
Crossing of Seaboard Air Line Ry	32 43 24.4	80 14 25.2	1,729
Road crossing at Meggett station	32 43 04.9	80 14 22.8	1,986
Second-class road crossing	32 42 18.4	80 14 02.8	4,993
Road crossing	32 41 38.7	80 13 37.2	4,577
Yonges Island post office, 100 feet south and 50 feet east of, 15 feet north of center of roadway, 60 feet west of main track of railroad, about 150 feet northwest of Yonges Island station; iron post stamped "Prim. Trav. Sta. No. 13, 1917 Mac."	32 41 23.6	80 13 27.2	1,743
On Edisto Island. (By E. L. McNair in 1917.)			
East Base, Edisto Island, about one-half mile east of Mrs. F. W. Johnstone's residence, in open field; stone 20 inches square at base and 3½ feet high, marked: "Latitude 32° 33′ 15.425″ Longitude 80° 13′ 33.993″ A. D. Bache Supt. 1849"	32 33 15.42	80 13 33.99	.....
Edisto Island, cupola on residence of Mrs. F. W. Johnstone	32 33 08.2	80 14 02.2	2,520
Gateway on road to Johnstone house	32 32 53.5	80 14 40.8	3,534
Along Seaboard Air Line Ry. across northwest corner of quadrangle.			
Public-road crossing	32 43 15.3	80 14 52.0	.....
Meggetts, near station, crossing of Atlantic Coast Line and Seaboard Air Line railroads (junction with previous traverse line)	32 43 24.4	80 14 25.2	2,475
Public-road crossing	32 43 50.6	80 13 07.7	7,129
Road crossing	32 44 05.8	80 12 22.6	4,150
Public-road crossing	32 44 21.1	80 11 37.2	4,475
Public-road crossing	32 44 41.7	80 10 36.4	5,595
Wide Awake spur, road crossing at	32 44 55.7	80 09 55.0	3,811

Magnetic declination near southwest corner of quadrangle, 0.7° W.; near north border, 1.0° W.

WADMELAW ISLAND QUADRANGLE—Continued.

South along highways through center of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Opposite milepost C 16	32	44	15.2	80	06	21.8	.....
Road forks	32	43	34.1	80	05	57.1	4,642
Crossroads	32	43	18.1	80	05	10.8	3,788
Crossroads, midway between mail box and large oak tree	32	43	00.8	80	05	10.8	1,750
Forks of road	32	42	07.8	80	06	31.6	8,738
Road forks, left to Rockville, right to Martins Point	32	42	02.6	80	07	24.3	4,535
Angle in road, on center line both ways	32	42	09.4	80	08	09.9	3,959
Angle in road, on center line both ways	32	42	12.7	80	08	55.9	3,940
Crossing of log tramway, wooden rails	32	41	56.1	80	09	23.7	2,910
Crossroads	32	41	37.6	80	10	09.8	4,364
T road corners, near church	32	40	50.0	80	09	46.4	5,208
Forks of road, 10 feet north and 3 feet east of signboard	32	40	15.3	80	09	48.4	3,510
Rockville, 4 miles north of, on east side of road, near milestone R 4, Chn 25; iron post stamped "Prim Trav. Sta. No. 50, 1917 Mac."	32	39	31.7	80	10	16.3	5,008
Milestone C 26, R 3	32	38	46.1	80	10	43.0	5,144
Second-class crossroads	32	38	23.3	80	11	03.1	2,875
Milepost C 27, R 2	32	38	03.9	80	11	19.6	2,410
Milepost C 28, R 1	32	37	14.2	80	11	21.8	5,032
Forks of road	32	36	40.7	80	11	44.8	3,910
Rockville Presbyterian Church, supposed to be directly under steeple which blew down in 1893; surface mark is 5½-inch tile, inside of which is a standard Coast Survey tablet marked "Triang. Sta. etc." set in cement	32	35	58.79	80	11	43.60	4,241

Unchecked spur line south near east border of quadrangle.

Crossroads midway between mail box and large oak tree	32	43	00.8	80	05	10.8	.....
Forks of road	32	42	53.5	80	04	29.6	3,601
T road west	32	42	29.8	80	04	08.2	3,014
Crossroads	32	41	32.7	80	04	18.8	5,839
Forks of road	32	41	15.5	80	04	22.1	1,759
Forks of road at "Hum Spun" Corners	32	40	29.4	80	03	01.1	8,343
T road south	32	39	39.7	80	03	43.8	6,210
Second-class T road south	32	39	32.8	80	04	43.2	5,131
Mullet Hall, 4 miles northeast of, 0.6 mile west of M. Barshay's store, 10 feet north of and opposite large live-oak tree; iron post stamped "Prim. Trav. Sta. No. 51, 1917 Mac."	32	39	30.1	80	04	57.8	1,270

Southwest along highways in southwest corner of quadrangle. (By E. L. McNair in 1917.)

Iron bench mark 51 (previously described)	32	39	30.1	80	04	57.8	.....
T road south	32	39	16.8	80	05	45.4	4,288
Second-class T road south	32	39	09.8	80	06	20.4	3,074
Forks of road, in line with road south and road N. 70° E.	32	38	47.2	80	07	20.3	5,615
Forks of road	32	39	00.4	80	08	05.5	4,084
Second-class crossroad	32	38	37.2	80	08	23.1	2,791
Second-class crossroad	32	38	25.3	80	08	34.4	1,543
Second-class crossroad	32	37	54.5	80	08	58.2	3,719
Center of bridge across marsh, near W. M. Andell's store and cotton gin	32	36	31.1	80	09	02.0	8,440
Gateway where road enters wood and turns square to right	32	35	10.4	80	09	36.6	8,677
Center of bridge over tidewater stream	32	34	46.1	80	09	47.4	2,623
Seabrook No. 2 triangulation station of the U. S. Coast and Geodetic Survey, on northeast side of mouth of North Edisto River on beach of Seabrook Island, about 800 feet easterly from new clubhouse; concrete post with U. S. Coast and Geodetic Survey tablet	32	33	48.61	80	10	37.69	7,234

Along highways.

Road forks, at "Hum Spun" Corners	32	40	29.4	80	03	01.1	.....
Second-class crossroad	32	40	35.3	80	02	37.7	2,134
Brick-arch culvert over stream	32	40	52.1	80	01	45.7	4,712
Forks of road, private road east between two trees	32	41	33.0	80	00	58.8	5,762
T road east	32	41	50.4	80	00	53.9	1,804
Forks of road	32	42	41.5	80	01	06.0	5,263
Crossroads	32	43	07.0	80	01	17.9	2,769
Second-class crossroads	32	43	55.1	80	01	46.7	5,439
Second-class crossroads	32	44	19.5	80	02	05.7	2,951
Forks of road	32	44	47.8	80	02	27.3	3,404

Magnetic declination for southwest part of quadrangle, 0.6° W.; for northeast part, 1.2° W.

WALTERBORO QUADRANGLE.

Northwest along Atlantic Coast Line R. R. near center of quadrangle to Stokes, thence northeast along highway to north border of quadrangle. (By E. L. McNair in 1917.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Farm-road crossing	32 45 01.0	80 37 11.9	.....
Public-road crossing	32 45 30.4	80 37 20.4	3,060
Public-road crossing	32 46 26.3	80 37 36.6	5,810
Ritter, intersection of Atlantic Coast Line R. R. and Savannah Lumber Co.'s railroad	32 47 19.0	80 37 51.9	5,483
Ritter, public-road crossing	32 47 20.2	80 37 52.3	126
Road crossing	32 48 21.5	80 38 10.2	6,380
Road crossing	32 49 04.2	80 38 22.8	4,445
Drawdy flag station, at road crossing	32 49 59.6	80 38 39.2	5,780
Road crossing	32 51 01.9	80 38 51.9	6,495
Center of track, in line with road east	32 51 25.2	80 39 04.8	2,425
Road crossing	32 51 55.2	80 39 13.0	3,116
Milepost 10	32 52 15.3	80 39 18.2	2,075
Road crossing	32 52 45.6	80 39 26.1	3,130
Walterboro station, 500 feet north of, 50 feet south of milepost 12, 15 feet northeast of center of track, near gateway of track entrance to cotton factory, 15 inches from fence line; iron post stamped "Prim. Trav. Sta. No. 11, 1917 Mac." Azimuth to semaphore post at railroad station, 313° 29′ 30″	32 53 53.3	80 39 52.5	7,209
Road crossing	32 54 48.0	80 40 34.9	6,607
Road crossing	32 55 21.0	80 41 09.5	4,450
Road crossing	32 55 53.8	80 41 34.7	3,945
Milepost 16	32 56 29.5	80 42 06.8	4,533
Road crossing	32 56 36.8	80 42 30.1	2,114
Stokes station, 130 feet N. 15° W. from northeast corner of, 35 feet northeast of center of track, in line with fence, on east side of road going north; iron post stamped "Prim. Trav. Sta. No. 9, 1917 Mac"	32 57 35.2	80 43 33.5	8,005
Crossroads	32 58 12.5	80 43 13.3	4,146
Forks of road	32 58 32.0	80 42 42.6	3,269
Forks of road	32 59 28.2	80 42 28.5	5,809
Center of bridge over small stream	32 59 35.6	80 42 01.2	2,435

Magnetic declination near northwest corner of quadrangle, 0° 20′ E.

Along highways near west border of quadrangle.

Hendersonville Public School building, northwest corner of, 2 feet from brick foundation, 138 feet north of forks of road at McMillan's store, iron post stamped "Prim. Trav. Sta. No. 38, 1917 Mac"	32 47 49.4	80 44 00.4	.....
McMillan's store, road forks about 330 feet northwest of	32 47 50.4	80 44 02.6	220
T road south	32 48 32.3	80 43 52.5	4,320
T lane in road north leading through gate	32 48 31.7	80 43 24.7	2,375
Stake at right-angle turn in road, marked "XIII"	32 49 22.8	80 43 06.9	5,385
Road forks	32 50 14.6	80 42 59.7	5,276
Road forks	32 50 33.0	80 43 00.9	1,862
Center of roads northeast and southwest, opposite mail boxes and near road fork	32 50 12.6	80 43 25.4	2,949
T road south	32 50 21.7	80 44 17.6	4,547
Road forks	32 50 22.3	80 44 47.6	2,562

Magnetic declination near southwest corner of quadrangle, 0° 07′ E.

Road forks, second-class west	32 51 58.0	80 44 31.5	.....
Second-class crossroad	32 52 39.3	80 44 30.1	4,180
Road forks	32 53 00.0	80 44 34.1	2,115
Angle in road, at angle in line of rail fence	32 53 52.3	80 44 03.2	5,910
Forks of road, separation of wagon tracks	32 54 39.2	80 44 19.7	4,949
Crossroads, 380 feet northwest of crossing of log tramway	32 55 15.5	80 44 36.6	3,940
Road forks	32 55 32.7	80 44 29.6	1,838
Road forks	32 56 05.6	80 44 07.7	3,814
Road forks, about 600 feet northeast of church	32 56 19.1	80 43 52.8	1,866
T road	32 56 21.6	80 43 40.4	1,086
Stokes, "Prim. Trav. Sta. No. 9, 1917 Mac." (previously described)	32 57 35.2	80 43 33.5	7,465

Along east border of quadrangle.

Angle in road	32 55 27.4	80 30 17.6	.....
T road west	32 54 51.4	80 30 03.2	3,848

Magnetic declination near northwest corner of quadrangle, 0° 20′ E.

WALTERBORO QUADRANGLE—Continued.

Southeast along highway in northeast part of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossroads at Sidney precinct	32	59	57.9	80	34	06.6	
Private T road southwest to house	32	59	22.2	80	33	13.9	5,763
Round post office, 3 miles north of, at Rikenbaker's place, 30 feet east of center of road, 30 feet west of corner of house, 10 feet north of corner of fence; iron post stamped "Prim. Trav. Sta. No. 43, 1917 Mac"	32	58	44.0	80	32	41.3	4,751
T road west	32	58	09.0	80	32	39.4	3,539
T road east	32	57	45.4	80	32	33.6	2,440
T road east	32	56	57.0	80	32	30.5	4,903
T road east to Cottageville	32	56	27.4	80	32	29.6	2,997
Centerville (Round post office), T road corners	32	56	15.4	80	32	27.3	1,229
Second-class T road west	32	55	20.8	80	32	13.5	5,634
Intersection of tangents, at 60° angle in road	32	54	42.9	80	31	38.1	4,880
Road forks	32	54	27.3	80	31	06.3	3,136
Round post office, 3.15 miles south of, at angle in road, 1,500 feet north of Jacksonboro Road; iron post stamped "Prim. Trav. Sta. No. 42, 1917 Mac"	32	54	07.4	80	30	50.1	2,445
T road corners, east, west, and north	32	53	27.4	80	31	04.9	4,231

Magnetic declination near northeast corner of quadrangle, 0° 05′ E.

Along highways east in north part of quadrangle.

Walterboro, Prim. Trav. Sta. No. 11 (previously described)	32	53	53.3	80	39	52.5	
Walterboro, T street corner at Farmers and Merchants Bank	32	54	14.9	80	39	41.0	2,386
Cross roads	32	54	23.8	80	38	38.5	5,403
Forks of road	32	55	00.9	80	37	58.3	5,085
Forks of road	32	55	09.1	80	37	15.7	3,727
Crossing of log tramway	32	55	24.2	80	36	35.0	3,787
Road forks	32	55	30.2	80	36	08.0	2,380
T road south at store	32	55	44.7	80	34	47.2	7,032
Round post office, T road	32	56	15.4	80	32	27.3	12,322
Intersection of tangents, 1,910 feet east along track to road crossing	32	58	04.0	80	44	23.5	
Road crossing	32	57	45.3	80	43	50.1	3,415
Stokes, Prim. Trav. Sta. No. 9 (previously described)	32	57	35.2	80	43	33.5	1,743

Magnetic declination near center of quadrangle, 0° 31′ E.

WAMPEE QUADRANGLE.

East along highways. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork	33	50	21.7	78	44	45.6	
Crossroads	33	50	46.9	78	44	29.2	2,894
Road fork	33	51	03.9	78	44	16.7	2,006
Wampee, 1 mile west of fork of Conway and Little River and Myrtle Beach roads	33	51	32.2	78	44	18.4	2,870
Wampee, road fork at, 300 feet east of store and flowing well	33	51	41.0	78	43	48.2	2,700
Road fork	33	51	06.5	78	42	20.4	8,188
Crossroads	33	51	11.2	78	41	56.2	2,087
Road fork	33	51	09.9	78	41	11.4	3,787
Road fork	33	51	11.2	78	40	27.5	3,699
Road fork near bridge	33	51	12.0	78	40	08.1	1,642
Crossroads at old store	33	51	25.5	78	39	37.2	2,934
Center of bridge, the south one of two	33	51	04.0	78	39	24.0	2,449
Road fork through gate to Honey Grove	33	50	55.6	78	39	01.4	2,092
Road fork	33	50	53.3	78	38	05.2	4,749
Center of road, opposite church	33	50	50.0	78	37	31.9	2,828
Center of road, opposite house	33	51	15.1	78	35	48.6	4,660
Shell Bank triangulation station of the U. S. Coast and Geodetic Survey, on a shell mound, in the marsh called Dunn's Sound, near the mainland. A large loaded, conical bombshell was buried about 2 feet deep in the clamshells, cone upward, and over it was placed a live-oak stub. This station is very secure and can be recovered at any time with little trouble	33	51	18.2	78	35	02.2	3,949

Magnetic declination for east part of quadrangle, 2° W.

WAMPEE QUADRANGLE—Continued.

East and southeast along highways.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
T road south to house	33	55	47.0	78	44	15.6	
Longs post office, opposite white church, center of road	33	56	10.4	78	44	02.2	2,618
Center of bridge over creek	33	56	41.1	78	43	53.8	3,186
Road fork at Buck Creek	33	57	06.4	78	43	24.4	3,553
Crossroads at store	33	57	17.0	78	42	42.9	3,658
Road fork, Conway and Pireway and Wortham Ferry roads	33	57	29.6	78	41	37.9	5,619
Road fork	33	56	48.9	78	41	05.3	4,947
Road fork	33	56	08.8	78	40	51.1	4,224
Wortham Ferry, north landing	33	55	27.1	78	40	19.5	4,989
Brookville, crossroads	33	54	21.2	78	39	30.8	7,824
Tramroad crossing	33	53	53.8	78	39	05.8	3,479
Center of culvert	33	53	27.2	78	38	26.7	4,260
Tramroad crossing	33	53	04.8	78	37	53.0	3,640
Tramroad crossing	33	53	01.3	78	37	19.1	2,876
Little River post office, in schoolhouse yard, 17 feet east of northeast corner of building; iron post stamped "Prim. Trav. Sta. No. 24 J"	33	52	39.7	78	36	55.5	2,958
Center of bridge	33	52	25.5	78	37	14.3	2,144
Center of bridge	33	52	06.5	78	37	48.2	3,442
Center of bridge	33	51	52.1	78	38	30.7	3,866
Center of road, opposite white church	33	51	44.3	78	39	06.1	3,089
Crossroads at old store	33	51	25.5	78	39	37.2	3,241

Magnetic declination for southeast part of quadrangle, 2° 11′ W.

From center of quadrangle east along highways.

Prim. Trav. Sta. No. 24 (previously described)	33	52	39.7	78	36	55.5	
Crossing of tramroad	33	52	42 0	78	36	30.4	2,134
Center of bridge over creek, the west bridge of two	33	53	16.8	78	35	36.4	5,746
North Carolina and South Carolina State line	33	53	24.9	78	35	13.3	2,115

Magnetic declination for center of quadrangle, 2° 04′ W.

WARRENVILLE QUADRANGLE.

From Bath northeast along Southern Ry. (By B. H. Yoakum in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Bath station, 1,790 feet west of, crossing of Aiken highway	33	30	01.4	81	52	43.0	
Bath station, opposite semaphore, west rail of main track	33	30	17.9	81	52	16.4	2,804
Milepost 67, center of track opposite	33	30	48.5	81	51	20.8	5,639
Langley, 400 feet southwest of station site, 100 feet north of post office, 10 feet south of Augusta-Aiken electric railway track, 25 feet east of public-road forks; iron post stamped "Prim. Trav. Sta. No. 1, 1918 Y"	33	31	04.7	81	50	45.2	3,432
Milepost 65, center of track opposite	33	31	51.6	81	49	42.8	7,093
Warrenville, 1 mile southwest of, trestle over Augusta-Aiken electric railway	33	32	17.5	81	49	15.8	3,480
Warrenville, 190 feet west of station (stake in McNair's line)	33	32	57.9	81	48	39.5	5,110
Graniteville, opposite semaphore, center of main line	33	33	59.7	81	48	27.2	6,331
Graniteville, 0.6 mile north of, center of road crossing	33	34	30.2	81	48	18.3	3,173
Road crossing, 600 feet south of milepost 177	33	34	43.0	81	48	23 0	1,358
Rennie siding, center line of track, opposite sign	33	35	06.2	81	48	30.8	2,435
Private-road crossing	33	36	05.3	81	48	30.1	5,977
Vaucluse, 50 feet south of station, 35 feet east of railroad track, on east side of wagon road, 3 feet east of electric-light pole; iron post stamped "Prim. Trav. Sta. No. 2, 1918 Y"	33	36	48.6	81	48	14.9	4,560
Center of trestle over Horse Creek, 900 feet north of milepost 174	33	37	26.0	81	48	32 5	4,070
Center of trestle over Horse Creek, marked "173.5"	33	37	41.1	81	48	26.0	1,619
Center of trestle marked "172.5," 275 feet south of road crossing	33	38	26 5	81	48	36 8	4,678
Milepost 172, center of track opposite	33	38	57.4	81	48	34.7	3,131
Milepost 171, center of track opposite (see R-163)	33	39	43.4	81	48	21.7	4,770
Sunnybrook, oppos te signboard, center line of track	33	40	29 5	81	48	40 0	4,910
North end of trestle, opposite signpost 1692, center of track	33	40	58.9	81	49	07.8	3,786
Road crossing, 1,300 feet north of milepost 168	33	42	16 6	81	49	24 0	7,972
Road crossing, 800 feet south of milepost 167	33	42	38 3	81	49	50.5	3,128
Rotalata station, opposite sign, center of track	33	43	28.0	81	50	38.4	6,216
Trenton station, 700 feet N. 28° E. of, 80 feet east of Charlotte, Columbia & Augusta line track, 20 feet south of wagon road, in triangle formed by railroad wye; iron post stamped "Prim. Trav. Sta. No. 3, 1918"	33	44	36.7	81	50	27.0	7,012

WARRENVILLE QUADRANGLE—Continued.

Northwest along highways near west border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Butler (U. S. Coast and Geodetic Survey triangulation station), in North Augusta, on "old Butler place," now owned and occupied by Dr. W. E. Mealing, at north end of peach orchard, 300 meters north of large square two and a half story brick house standing on top of a hill, about 4 meters west of dividing line between the Butler property and that of P. B. Lobin, whose house is 150 meters north and a little east of station, 150 meters west of Augusta-Aiken electric railway; pipe filled with concrete with a 40-d nail in center of pipe, head down, with point just out of concrete; marked "U. S. C. & G. S. 1902"	33	30	24.94	81	57	50.20	.....
North Augusta, water tower	33	30	14.4	81	58	02.4	1,489
Road fork	33	30	37.8	81	58	31.5	3,418
T road east, near two-story frame house on north side of road	33	31	36.0	81	58	46.8	6,026
Crossroads, private road east and west	33	32	09.2	81	59	17.7	4,256
Fox Creek, 1,170 feet west of, 4 feet north of 10-inch poplar tree; stone in middle of road fork	33	32	29.9	81	59	53.5	3,680
Currytown road, 485 feet east of Barker's residence, in southwest angle of crossroads, on root of 13-inch red-oak tree, on west side of tree; copper nail and washer	33	36	03.0	81	58	35.8	.....
Center of Five Notch road, at T road west	33	36	47.7	81	57	55.9	5,631
Center of Five Notch road, opposite milepost 11	33	37	10.2	81	58	07.6	2,480
Center of Five Notch road, at forks at Gardnerville School	33	37	33.5	81	58	23.5	2,717
Squared milepost, on east side of road, marked "12"	33	38	04.7	81	58	29.8	3,200
Center of road, at T road east	33	38	21.5	81	58	42.4	1,999
Center of wooden bridge over Cheves Creek, across "Five Notch road"	33	38	51.8	81	58	42.1	3,064
Center of road, at T road east, near H. W. Shaw's residence	33	39	06.9	81	58	27.0	1,984
Road fork	33	40	05.8	81	58	40.5	6,065
Ropers crossroads, 50 feet north of, on east side of road, in pine tree; copper nail and washer	33	40	52.8	81	59	07.0	5,247

North along highways near west border of quadrangle.

Center of public road at private-road crossing, opposite W. J. Lanham's residence	33	42	19.1	81	59	57.7	.....
Center of crossroads	33	42	47.6	81	59	48.1	3,002

East along highways near north border of quadrangle.

Road fork	33	44	15.9	81	59	18.3	.....
Center of road, opposite center of C. Wells's residence	33	44	11.0	81	58	46.3	2,746
J. K. Smith's residence, on north side of road near, on root of 18-inch tree; copper nail and washer	33	44	07.5	81	58	24.4	1,880
Road fork	33	44	08.9	81	58	05.8	1,573
Road fork	33	44	19.0	81	57	43.0	2,183
Road fork, 450 feet north of another road fork	33	44	41.3	81	57	23.7	2,778
Crossroads, 550 feet east of residence	33	44	48.7	81	56	24.5	5,047
Stone milepost, on old stage road	33	44	55.7	81	56	09.7	1,440
Crossroads, 350 feet north of post marked "5 miles to Edgefield"	33	44	35.5	81	52	05.1	.....
Trenton, 0.75 mile west of, center of crossroads	33	44	02.0	81	51	21.8	4,977
Trenton, Prim. Trav. Sta. No. 3 (previously described)	33	44	36.7	81	50	27.0	5,802

Northwest along highways through center of quadrangle.

Vaucluse, Prim. Trav. Sta. No. 2 (previously described)	33	36	48.6	81	48	14.9	.....
Vaucluse, 1 mile west of, 630 feet southeast of milepost 7, road fork west	33	37	00.7	81	49	09.8	4,800
Vaucluse, 2 miles northwest of, 230 feet southeast of stone marked "XIII" in milepost 8	33	37	45.4	81	49	53.1	5,823
Crossroads	33	38	16.0	81	50	29.6	4,371
Road fork	33	38	43.9	81	50	54.1	3,498
Squared sandstone milepost, on north side of road, 80 feet east of large red-oak tree	33	39	00.0	81	51	22.0	2,859
Crossroads	33	39	01.3	81	51	24.2	220
Crossroads	33	39	11.0	81	51	39.9	1,664
Bettis Academy, 0.5 mile southwest of, road fork	33	39	18.8	81	51	54.1	1,435
Squared sandstone milepost marked "7"	33	39	24.4	81	52	05.5	1,120

WARRENVILLE QUADRANGLE—Continued.

Northwest along highways through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork, 225 feet southeast of R. Ryan's residence	33 39 38.6	81 52 18.3	1,795
Plank road, at junction with Newmarket road at the "Old Wells place," 1 mile southwest of Purdue's store, 29 feet northwest of crossroads; iron post stamped "Prim. Trav. Sta. No. 6, 1918 Y"	33 39 56.4	81 52 52.0	3,364
Cheves Creek ford, 300 feet west of, at T road north	33 40 40.4	81 54 08.6	7,855
Crossroads, at mail box 26	33 40 38.6	81 54 23.9	1,307
T road south, 35 feet north of mail box	33 40 58.6	81 55 15.8	4,832
T road west, opposite Alex. Palmer's mail box	33 41 30.2	81 55 59.2	4,856
T road north to Edgefield, 1,100 feet east of crossroads	33 41 50.6	81 56 29.3	3,276
Roper's crossroads (previously described)	33 40 52.8	81 59 07.0	14,551

Magnetic declination for northeast part of quadrangle, 0.7° E.; for west part, 1.0° E.; for north part, 0.7° E.; for center, 0.6° E.

Along Southern Ry. near south border of quadrangle. (By E. L. McNair in 1918.)

Milepost 60, center of track opposite	33 33 32.0	81 45 20.1	
Road crossing	33 33 35.0	81 46 25.5	5,540
Parker spur, switch stand at	33 33 35.4	81 47 05.9	3,423
Road crossing	33 33 20.2	81 47 57.1	4,595

Along Southern Ry. near northeast corner of quadrangle. (By B. H. Yoakum in 1918.)

Trenton, 1 mile south of, First Baptist Church spire	33 44 08.0	81 49 59.3	
Trenton, 1.5 miles southeast of, road crossing	33 44 22.2	81 49 37.3	2,356
Road crossing	33 43 42.1	81 49 09.2	4,697
Milepost 9, railroad track opposite	33 43 08.5	81 48 19.4	5,410
Milepost 10, railroad track opposite	33 42 28.2	81 47 47.3	4,895
Baynhams, road crossing at	33 42 16.0	81 47 36.9	1,507
Road crossing	33 41 52.3	81 46 34.9	5,768
Eureka, 40 feet east of wagon road, 22 feet south of main line, in plat of ground between railroad track and wagon road; iron post stamped "Prim. Trav. Sta. No. 4, 1918 Y"	33 41 38.1	81 46 01.0	3,206
Milepost 13, railroad track opposite	33 41 04.3	81 45 20.8	4,822
Milledgeville, road crossing at	33 40 26.2	81 45 07.2	4,018
Eureka, about 1 mile northeast of bridge over Shaws Creek	33 42 13.9	81 45 36.1	

WAVERLY MILLS QUADRANGLE.

Northeast through northwest corner of quadrangle. (By Oscar Jones in 1917.)

Center of small bridge	33 27 56.6	79 13 35.8	
Road fork	33 28 11.0	79 13 09.5	2,665
Road fork	33 28 36.7	79 12 22.9	4,726
Road fork	33 28 47.9	79 12 02.5	2,070
Road fork	33 29 15.1	79 11 12.1	5,070

West along north border of quadrangle.

Road forks	33 28 36.7	79 12 22.9	
Center of small bridge over creek	33 29 09.4	79 13 04.8	4,846
Road fork	33 29 18.2	79 14 09.6	5,564

Northeast along highways. (Checked spur line.)

Road forks	33 19 21.6	79 14 58.2	
Crossroads	33 19 38.4	79 14 28.8	3,019
Crossroads	33 20 10.3	79 14 07.0	3,720
Road fork at creek	33 20 37.5	79 13 51.1	3,057
Road fork east	33 21 18.7	79 13 11.9	5,328
Crossroads	33 22 03.9	79 13 08.7	4,571
Crossroad to Arcadia	33 22 39.5	79 12 43.4	4,194
Arcadia, center of iron gate	33 22 54.1	79 13 12.4	2,864

WAVERLY MILLS QUADRANGLE—Continued.

Northeast along highways—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork	33	23	15.2	79	12	46.3	3,074
Creek crossing	33	23	24.8	79	12	20.0	2,431
Crossroads	33	23	52.8	79	12	06.1	3,066
Railroad crossing	33	24	46.6	79	11	15.9	6,913
Road crossing	33	25	06.8	79	10	48.2	3,104
Crossing of old tramway	33	25	14.1	79	10	29.4	1,750
Hagley, 1 mile east of, crossroads	33	25	51.8	79	09	52.5	4,929
Center of crossroads	33	23	05.6	79	12	20.0	.....

From Hagley northeast. (Unchecked spur line.)

Crossroads	33	26	06.7	79	04	41.2	.....
Creek crossing	33	26	27.6	79	09	23.8	.....
Creek crossing	33	26	44.9	79	09	09.3	2,140
Crossroads	33	26	59.2	79	08	57.2	1,770
Crossing of tramway	33	27	26.4	79	08	36.1	3,278
Road fork at store	33	27	46.5	79	08	26.8	2,178
Crossroads	33	28	25.2	79	08	04.1	4,359
Oatland Creek Church, 54 feet west of southwest corner of; iron post stamped "Prim. Trav. Sta. No. 7"	33	29	16.6	79	07	26.4	6,107

Magnetic declination for line 1.8° W.

WILLISTON QUADRANGLE.

Southwest along Atlantic Coast Line R. R. (By E. L. McNair in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing, 40 feet east of milepost 72	33	16	09.1	81	15	37.6	.....
Road crossing	33	15	53.9	81	16	26.3	4,410
Road crossing, public road	33	15	42.1	81	17	04.0	3,420
Road crossing	33	15	35.8	81	17	54.6	4,344
Trestle bridge over creek, center of	33	15	36.0	81	18	31.3	3,115
Road crossing	33	15	36.2	81	19	07.2	3,050
Road crossing	33	15	22.1	81	19	41.5	3,241
Road crossing, under railroad	33	15	00.7	81	20	09.6	3,220

Near Hilda. (By H. S. Senseney in 1918.)

Hilda, 2 miles south of, 0.25 mile north of Hercules Creek, 20 feet south and 15 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 13 S, 1918"	33	15	03.2	81	15	27.2	.....
T road west	33	15	30.6	81	15	12.6	3,040
T road west	33	15	50.5	81	15	01.2	2,235

Magnetic declination for quadrangle, 0.1° W.

Along Southern Ry. through center of quadrangle. (By E. L. McNair in 1918.)

Road crossing	33	24	57.7	81	27	04.7	.....
Road crossing	33	25	19.4	81	27	48.9	4,340
Road crossing between White Pond station and water tank	33	25	40.0	81	28	18.9	3,281
Road crossing	33	26	29.1	81	28	56.2	5,886
Nixon spur, switch stand at	33	27	05.7	81	29	24.1	4,390
Road crossing	33	27	28.1	81	29	41.2	2,690
Intersection of tangents	33	21	16.2	81	15	18.9	.....
Blackville station, 135 feet west of railroad crossing, about in line with track going east, 15 feet south of track west; iron post stamped "Prim. Trav. Sta. No. 92, 1918 Mac." Azimuth to milepost 28, 105° 21′ 55″	33	21	18.2	81	16	31.0	6,120
Road crossing	33	21	37.1	81	18	00.3	7,820
Road crossing	33	21	51.3	81	19	08.3	5,940

WILLISTON QUADRANGLE—Continued.

Along Southern Ry. through center of quadrangle—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Reynolds station, road crossing at	33 22 01.5	81 19 49.6	3,654
Road crossing	33 22 24.0	81 20 59.2	6,320
Road crossing	33 22 33.5	81 21 46.0	4,085
Elko station, opposite and across track from east end of, 27 feet north of center of track; iron post stamped "Prim. Trav. Sta. No. 93, 1918 Mac." Azimuth to center of square church tower, 348° 44′ 00″	33 22 51.6	81 22 47.6	5,537
Milepost 35, center of track opposite	33 23 15.8	81 23 37.7	4,898
Milepost 36, center of track opposite	33 23 42.3	81 24 31.5	5,290
Williston station, street crossing 100 feet west of	33 24 07.0	81 25 21.7	4,931
Road crossing	33 24 30.3	81 26 09.1	4,660

Along highways near west border of quadrangle. (By B. H. Yoakum in 1918.)

Seven Pines School, crossroads at	33 15 08.1	81 27 06.8	.....
Private-road forks	33 15 58.8	81 27 03.0	5,128
Intersection of five roads	33 16 44.1	81 28 31.5	8,797
Road forks	33 17 09.0	81 28 59.5	3,463
Road forks	33 20 56.2	81 29 30.4	7,183
Crossroads	33 21 24.7	81 29 02.0	3,758
Crossroads	33 22 08.5	81 28 41.6	4,741
Williston, 2.75 miles southwest of, at residence of T. W. Scott, 30 feet south and 10 feet west of crossroads; iron post stamped "Prim. Trav. Sta. No. 19, 1918 Y"	33 22 57.4	81 27 29.7	7,851
Crossroads	33 23 47.5	81 27 50.9	5,362
Road forks	33 24 19.3	81 28 03.2	3,378
Crossroads	33 25 03.7	81 28 41.0	5,506

Magnetic declination for west border of quadrangle, 0° 34′ E.

From Blackville to Springfield along highways. (By George T. Hawkins in 1918.)

Blackville, "Prim. Trav. Sta. No. 92, Mac. 1917"	33 21 18.2	81 16 31.0	.....
Forks of road, 1.2 miles north of Blackville	33 22 15.6	81 16 26.4	5,817
Bridge	33 23 15.8	81 16 41.2	6,217
T road east at three mail boxes	33 23 40.1	81 16 50.0	2,565
Crossroads, 300 feet northeast to house	33 24 48.7	81 16 58.6	6,978
County-road fork to northwest	33 25 48.5	81 17 08.9	6,108
Crossroads, three mail boxes	33 26 42.1	81 17 05.4	5,428
T road west, in swamp	33 27 30.0	81 16 42.1	5,230
Forks of road to east, in swamp	33 27 46.5	81 16 16.7	2,728
Road east	33 28 26.2	81 16 12.8	4,017
Forks of road, 1.5 miles southeast of Springfield	33 28 40.9	81 16 06.6	1,578
Springfield, 0.75 mile southeast of, 20 feet north and 10 feet west to crossroads; (junction point)	33 29 32.9	81 15 52.0	5,405

WOODFORD QUADRANGLE.

West along highways near south border of quadrangle. (By George T. Hawkins in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Station 41=station 350	33 31 53.6	81 07 30.2	.....
Second-class crossroads	33 31 25.1	81 08 22.0	5,244
Road forks, 70 feet southwest to signboard	33 31 13.9	81 08 34.9	1,580
Second-class road northwest	33 30 47.0	81 09 19.7	4,668
Three corners at new house	33 30 34.8	81 10 21.7	5,396
Road fork to north, 150 feet east to pecan tree	33 30 44.1	81 11 08.1	4,035
T road south	33 30 27.8	81 11 43.3	3,410
T road north, telephone line	33 30 15.6	81 12 30.9	4,219
T road north, telephone line	33 30 15.3	81 13 05.0	2,878

WOODFORD QUADRANGLE—Continued.

West along highways near south border of quadrangle. (By Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossroads	33	31	17.2	81	00	19.5	.....
Sawmill, 300 feet east of, road fork	33	31	12.5	81	01	29.2	5,914
Pine Hill Church, crossroads at	33	31	16.5	81	02	54.5	7,237
Neeses, 4 miles east of, on north side of Ninety-six road and in line with T road south; iron post stamped "Elev. 333"	33	31	24.4	81	04	10.2	6,448
Crossroads	33	31	19.4	81	05	29.7	6,753
Township corner, on north side of road, in 12 by 12 inch granite post	33	31	21.9	81	06	19.4	4,214
Road fork	33	31	34.3	81	06	51.3	2,967
Neeses, 500 feet south of railroad station, at road crossing; rail joint	33	31	53.60	81	07	30.20	3,829

Magnetic declination for south border of quadrangle, 0° 15′ W.

North along west border of quadrangle. (By G. T. Hawkins in 1918.)

Second-class road	33	32	23.8	81	14	58.4	.....
T road east at house	33	32	53.7	81	14	49.8	3,110
Four corners, telephone lines north, south, and west	33	33	42.8	81	14	35.8	5,100
Opposite old store (W. A. Knott's)	33	34	47.2	81	14	11.9	6,817
Road southeast, 0.25 mile south of school	33	35	14.5	81	14	02.6	2,870
Crossroad north of school	33	35	29.1	81	13	57.1	1,540
Springfield, 8.5 miles north of, at northeast corner of crossroad, southwest of five mail boxes; iron post stamped "Prim. Trav. Sta. No. 55, 1918 H"	33	36	03.17	81	13	43.37	3,636
Three corners	33	35	42.3	81	14	39.2	5,172

North through northwest part of quadrangle.

Springfield, 8.5 miles north of, Prim. Trav. Sta. No. 55, 1918 H (previously described)	33	36	03.17	81	13	43.37	.....
Second-class fork	33	36	41.8	81	13	21.8	4,309
Crossroad at mail box	33	37	35.1	81	12	36.0	6,637
Second-class crossroads, 200 feet west to house, 20 feet north to mail box 61	33	38	06.3	81	11	58.5	4,471
Second-class crossroad	33	38	42.9	81	11	22.4	4,793
T road west at house	33	38	53.0	81	11	15.6	1,173
North end of bridge	33	39	05.6	81	11	06.7	1,482
Fork of road, 200 feet west of new house	33	39	36.2	81	11	00.4	3,143
Fork of road northwest	33	39	55.3	81	11	02.4	1,937
Crossroads, 300 feet west to house	33	40	46.3	81	11	06.8	5,167
Road west at mail box	33	41	18.8	81	11	11.8	3,310
Fork of road to northwest, 300 feet north of new house	33	41	30.3	81	10	52.2	2,029
Second-class crossroad	33	42	19.7	81	10	22.4	5,588
Forks of road, 50 feet south to sign "Blackville"	33	42	55.8	81	10	11.0	3,777
Forks of road northwest	33	43	18.3	81	10	20.3	2,407
Southeast corner of crossing of Columbia and Blackville road with Swansea and Wagener road; iron post stamped "Prim. Trav. Sta. No. 57, 1918 H"	33	43	38.23	81	10	23.46	2,034

Magnetic declination along west border of quadrangle, 0° 20′ W.

From Swansea west along public road to post 57.

Swansea F (traverse station of the U. S. Coast and Geodetic Survey) (described later)	33	44	28.00	81	06	10.90	.....
Center of bridge over mill race at mill	33	43	57.8	81	06	28.8	3,402
Road fork	33	43	52.6	81	07	07.1	3,272
Crossroads	33	43	48.2	81	07	59.6	4,461
Crossroads	33	43	58.9	81	08	58.1	5,052
Road fork, at foot of hill	33	43	57.8	81	09	48.9	4,295
Crossing of Columbia and Blackville road with Swansea road, Prim. Trav. Sta. No. 57 H, 1918 (previously described)	33	43	38.23	81	10	23.46	3,523

Magnetic declination for quadrangle, 0.30° W.

WOODFORD QUADRANGLE—Continued.

West along public road to Swansea. (By Oscar Jones in 1919.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork	33	44	08.4	81	00	39.5	.....
Road fork	33	44	12.2	81	01	15.0	3,022
Crossroads	33	44	23.8	81	01	40.2	2,420
Road fork	33	44	26.4	81	02	55.7	6,380
Center of road, opposite house on south side	33	44	28.1	81	04	54.9	10,064
U. S. Coast and Geodetic Survey's station Swansea F (described later)	33	44	28.00	81	06	10.90	6,415

North along Seaboard Air Line Ry. (By George T. Hawkins in 1918.)

Second-class road crossing	33	30	00.7	81	07	07.5	.....
Norway C (traverse station of the U. S. Coast and Geodetic Survey), on Seaboard Air Line Ry. right of way, at curve 250 meters north of milepost 242, about 1.5 miles south of Neeses railroad station, at intersection of tangents to curve of east rail of main track, 8.45 meters west of west rail; standard disk in top of a square block of concrete	33	30	40.40	81	07	09.82	4,018
Second-class road crossing	33	30	53.9	81	07	07.0	1,383
Second-class road crossing	33	31	39.0	81	07	24.2	4,792
Neeses station, 500 feet south of, joint at road crossing	33	31	53.6	81	07	30.2	1,563
Neeses (traverse station of U. S. Coast and Geodetic Survey), in town of Neeses, on south side of street which runs east and west one block south of Seaboard Air Line Ry. depot, 10 meters south of middle of street, 125 meters east of Seaboard Air Line Ry.'s main track. (U. S. C. & G. S. b. m. V_1.) Distance 129.33 meters from station mark. Surface-station mark: A standard disk in top of square block of concrete	33	31	54.59	81	07	25.53	409
County-road crossing	33	32	36.8	81	07	34.2	4,325
South Livingston station	33	33	06.5	81	07	10.8	3,594
Livingston (traverse station of the U. S. Coast and Geodetic Survey), on Seaboard Air Line Ry. right of way, on east bank of cut, 250 meters north of depot at Livingston, 170 meters north of switch stand at north end of side track, 7.5 meters east of east rail. Station is between the public wagon road and the railroad track, about 2 meters above the track. Reference mark is distant 17.40 meters, 7.29 meters west of west rail, on line with telegraph poles, and about 2 meters above track. Surface-station mark: A standard disk in top of a square block of concrete	33	33	23.66	81	07	09.39	1,730
Second-class road crossing	33	33	57.7	81	07	07.4	3,449
Livingston A (traverse station of the U. S. Coast and Geodetic Survey), on the Seaboard Air Line Ry. right of way, at curve 1 mile north of Livingston railroad station, at intersection of tangents to curve of east rail of main track, 30 meters west of track. The land about the station is cultivated. Reference mark is distant 29.84 meters, 6.17 meters west of west rail, about 0.75 meter below track. Surface-station mark: A standard disk in top of a square block of concrete	33	34	04.11	81	07	07.00	650
Second-class road crossing	33	34	39.7	81	06	33.0	4,604
Center of river, east	33	35	28.2	81	06	20.3	5,023
North station, south end of siding	33	36	25.6	81	06	14.4	5,819
North station, road crossing north of	33	36	59.8	81	06	10.9	3,466
Mill road crossing	33	37	22.2	81	06	08.6	2,270
Road crossing	33	38	02.9	81	06	04.5	4,130
Douglas (traverse station of the U. S. Coast and Geodetic Survey), on Seaboard Air Line Ry. right of way, at curve at milepost 252, 1.25 miles south of Woodford railroad station, at intersection of tangents to curve of west rail of track, 18.50 meters east of east rail, 35 meters south of milepost. Reference mark is distant 31.15 meters, about 35 meters south of milepost, 8.61 meters west of west rail of track, on line with telegraph poles. Surface-station mark is a standard disk in top of a square block of concrete	33	38	47.35	81	05	59.96	4,509
Woodford railroad station, road crossing north of	33	40	02.8	81	06	41.2	8,384
Woodford (traverse station of the U. S. Coast and Geodetic Survey), on Seaboard Air Line Ry. right of way, at curve at milepost 254, 1 mile north of Woodford railroad station, at intersection of tangents to curve of west rail of main track, 7.7 meters west of west rail, about 1.5 meters above track. (U. S. C. & G. S. bench mark B_2). Distant 55.56 meters. Surface-station mark is a standard disk in top of a square block of concrete	33	40	26.38	81	06	54.11	2,619
Miller (traverse station of the U. S. Coast and Geodetic Survey), on Seaboard Air Line Ry. right of way, at curve at milepost 255, about 3.5 miles south of Swansea railroad station, at intersection of tangents to curve of west rail of main track, 22.79 meters west of west rail. Reference mark is distant 35.79 meters, 100 meters south of milepost, 8.46 meters east of east rail, just south of a private-road crossing. Surface-station mark is a standard disk in top of a square block of concrete	33	41	11.50	81	07	00.1	4,590

WOODFORD QUADRANGLE—Continued.

North along Seaboard Air Line Ry.—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	33	41	43.4	81	06	42.2	3,565
Miller A (traverse station of the U. S. Coast and Geodetic Survey) on Seaboard Air Line Ry. right of way, at first curve about 0.5 mile north of milepost 256, 2.5 miles south of Swansea railway station, at intersection of tangents to curve of west rail of main track, 16.77 meters west of west rail. Reference mark is distant 23.98 meters, 9.09 meters west of west rail, about on line with northward tangent to curve. Surface-station mark is standard disk in top of a square block of concrete	33	42	17.96	81	06	22.88	3,845
Road crossing, 40 feet southwest to U. S. Coast and Geodetic Survey bench mark	33	42	23.9	81	06	11.6	1,136
Road crossing, 20 feet east of crossing sign	33	43	09.3	81	06	03.7	4,636
Swansea C (traverse station of the U. S. Coast and Geodetic Survey), on Seaboard Air Line Ry. right of way, at curve 300 meters south of milepost 258, 0.5 mile south of Swansea railroad station, at intersection of tangents to curve of east rail of main track, 5.12 meters east of east rail; standard disk in top of square block of concrete	33	43	26.59	81	06	08.66	1,796
Swansea E (traverse station of U. S. Coast and Geodetic Survey), on Seaboard Air Line Ry. right of way, at first curve south of Swansea railroad station, 21.2 meters west of west rail of main track, at intersection of tangents to curve of east rail; a standard disk in top of square block of concrete	33	43	54.62	81	06	21.07	3,022
Road crossing, at south end of Swansea railroad station	33	44	13.6	81	06	15.4	1,982
Swansea F (traverse station of U. S. Coast and Geodetic Survey), on Seaboard Air Line Ry. right of way, at curve at milepost 259, one-eighth of a mile north of Swansea railroad station, at intersection of tangents to curve of east rail of main track, 18.17 meters east of east rail; standard disk in top of square block of concrete	33	44	28.00	81	06	10.90	1,497
Swansea G (traverse station of U. S. Coast and Geodetic Survey), on Seaboard Air Line Ry. right of way, at curve 650 meters north of milepost 259, 0.5 mile north of Swansea railroad station, at intersection of tangents to curve of east rail of track, 8.76 meters west of west rail; standard disk in top of square block of concrete	33	44	46.56	81	06	18.23	1,976

YAUHANNAH QUADRANGLE.

South along highways near east border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of bridge	33	44	35.8	79	01	21.1	.....
Center of bridge	33	44	06.1	79	01	28.6	3,063
Road fork at cattle dip	33	43	51.1	79	01	27.7	1,520
Crossroads	33	42	53.9	79	01	27.6	5,783
Center of bridge	33	42	31.5	79	01	15.4	2,489
Road fork	33	41	53.9	79	00	48.3	4,437
Road fork of Conway and Myrtle Beach road and Murrel's Inlet road, in southeast corner of, 300 feet west of church; iron post stamped "Prim. Trav. Sta. No. 18 J, 1918"	33	41	01.5	79	00	12.5	6,104
Road fork at cattle dip	33	40	28.1	79	00	19.8	3,426
Road fork	33	39	57.5	79	00	29.1	3,190
Road fork	33	39	35.2	79	00	45.8	2,662
Center of bridge	33	39	20.4	79	01	01.1	1,980
T road east at house	33	39	00.7	79	01	18.6	2,477
Crossroads	33	38	18.7	79	01	55.5	5,270
Road fork	33	37	34.0	79	02	08.6	4,657
Road fork, 100 feet north of cattle dip	33	37	04.9	79	02	45.1	4,260
Road fork, at store	33	36	29.3	79	03	15.8	4,440
Road fork, Murrel's Inlet 4 miles	33	35	43.0	79	03	39.5	5,094
Road fork	33	35	07.2	79	03	52.3	3,775
Crossing of small creek	33	34	26.3	79	03	46.2	4,167
Crossing of small creek	33	34	00.5	79	04	01.8	2,927
Crossroads, at cattle dip	33	33	44.2	79	04	15.7	2,025
Wachesaw crossroads	33	33	32.9	79	04	26.0	1,435
Crossroads, 200 feet south of church	33	33	17.0	79	04	35.5	1,795
Road fork	33	32	32.9	79	04	39.7	4,473
Crossroads	33	31	30.3	79	04	51.5	6,410
Crossroads, 200 feet north of store	33	30	59.7	79	05	11.0	3,505
Crossroads, at church	33	30	58.7	79	05	31.0	1,690
Crossroads	33	30	36.6	79	05	59.3	3,280
Crossroads	33	30	01.9	79	06	40.9	4,970

Magnetic declination near east border of quadrangle, 2° 00′ W.

YAUHANNAH QUADRANGLE—Continued.

Southwest along highways. (By Oscar Jones in 1918.)

Stations.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossroads, at church	33	44	21.2	79	04	48.7	
Center of bridge	33	43	44.5	79	04	38.8	3,808
Crossroads	33	43	28.5	79	04	42.6	1,651
Center of bridge	33	42	57.5	79	05	01.2	3,498
Road fork, at cattle dip	33	42	22.9	79	05	27.7	4,151
Road fork	33	42	13.0	79	05	53.9	2,430
Road fork	33	41	55.9	79	06	35.9	3,949
Klondyke, crossroads, 100 feet northeast of church	33	41	06.7	79	06	53.0	5,179
Crossing of old railroad grade	33	40	47.0	79	07	09.0	2,410
Port Harrison Ferry, 150 feet east of landing on north bank of Brine Creek, 10 feet northwest of fence corner; iron post stamped "Prim. Trav. Sta. No. 13 J, 1918"	33	39	51.9	79	08	07.2	7,424
Yauhannah Ferry landing	33	39	08.7	79	09	33.6	8,519
South ferry landing	33	39	07.8	79	09	39.4	491
Flowing well, center of road opposite	33	38	42.8	79	10	24.4	4,571
Smith Mill, road fork	33	37	53.2	79	11	16.2	6,651
Crossroads	33	37	29.6	79	11	26.9	2,560
Center of creek	33	36	58.7	79	11	40.8	3,340
Center of north bridge of two, 100 feet south of road fork	33	36	51.6	79	11	44.6	784
Road fork at church	33	36	37.1	79	11	39.6	1,519
Crossing of lumber railroad	33	35	53.0	79	10	25.2	4,630
Crossing of small stream	33	35	06.3	79	11	08.7	4,920
Center of road, opposite church	33	34	33.4	79	11	09.0	3,326
Crossroads, two mail boxes in northeast corner	33	33	52.6	79	11	09.7	4,130
Crossroads, at one mail box	33	33	10.0	79	11	23.0	4,450
Center of bridge	33	32	51.0	79	11	30.2	2,011
White Church, road fork to Plantersville at; hub	33	32	45.8	79	11	33.6	605
Road fork	33	32	31.8	79	11	27.6	1,500
T road east through painted gate	33	31	50.8	79	11	10.5	4,400
Road fork at large mail box	33	31	27.9	79	11	01.5	2,430
Center of bridge over creek	33	30	46.3	79	10	51.0	4,301
St. Frederick Peedee Church, 100 feet west of; iron post stamped "Prim. Trav. Sta. No. 4 J, 1917"	33	30	20.2	79	10	50.3	2,639

Northwest on highways near northwest corner of quadrangle.

Road fork	33	37	53.2	79	11	16.2	
Crossroads	33	38	35.0	79	10	57.7	4,499
Road fork, 400 feet southeast of church	33	39	01.0	79	11	11.6	2,882
Road fork	33	39	33.6	79	11	43.5	4,260
Road fork	33	40	20.5	79	12	29.4	6,120
Creek crossing	33	40	33.6	79	12	43.8	1,801
Road fork, near summit of hill	33	40	50.7	79	13	15.2	3,173
Crossroads at church	33	40	53.7	79	13	40.7	2,173
Road fork	33	40	58.2	79	14	21.3	3,460

Magnetic declination near northwest corner of quadrangle, 1° 58′ W.

North along highways near center of quadrangle.

Prim. Trav. Sta. No. 13, 1918 (previously described)	33	39	51.9	79	08	07.2	
Center of bridge	33	40	06.6	79	08	12.3	1,546
Crossroads	33	41	09.2	79	08	41.0	6,779
Road fork at log barn	33	41	34.8	79	09	00.9	3,082
Road fork	33	41	55.6	79	09	28.8	3,157
Road fork	33	42	31.4	79	09	59.0	4,430
Road fork	33	42	47.2	79	10	03.8	1,640
Road fork, 260 feet south of corner of field	33	43	04.5	79	10	03.2	1,753
Crossroads	33	43	29.0	79	10	04.2	2,472
Center of culvert	33	44	19.6	79	10	30.9	5,588
Center of bridge	33	44	40.0	79	10	42.8	2,291

Magnetic declination near center of quadrangle, 2° 10′ W.

East along public road near south and west borders of quadrangle. (By Oscar Jones in 1918.)

Center of bridge	33	33	33.6	79	14	32.7	
Center of culvert	33	33	31.7	79	13	39.8	4,481
Plantersville, 300 feet west of church, T road south	33	33	18.7	79	12	54.9	4,022
Road fork	33	32	55.2	79	12	06.1	4,768
Center of bridge	33	32	43.8	79	11	47.1	1,981
White church, hub at road fork to Plantersville	33	32	45.8	79	11	33.6	1,158

YEMASSEE QUADRANGLE.

Northeast along Atlantic Coast Line R. R. (By E. L. McNair in 1917.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road crossing	32	30	48.4	80	58	02.3	
Milepost 41	32	31	32.3	80	57	41.0	4,800
Concrete culvert	32	32	00.1	80	57	27.6	3,034
Bashan, road crossing at	32	32	36.9	80	57	09.8	4,015
Road crossing	32	33	00.8	80	56	58.2	2,615
Milepost 44	32	33	57.7	80	56	30.7	6,210
Milepost 45	32	34	46.2	80	56	07.2	5,295
Coosawhatchie station, 63 feet west of corner of platform at south end of station, 20 feet north and 15 feet west of public-road crossing, 8 feet northeast of crossing signpost, on bank, about 4 feet above track; iron post stamped "Prim. Trav. Sta. No. 3, 1917 Mac."	32	35	18.9	80	55	47.7	3,706
Road crossing	32	35	30.7	80	55	37.5	1,474
Road crossing	32	36	04.4	80	55	09.4	4,170
Road crossing	32	36	41.1	80	54	38.8	4,535
Milepost 49	32	37	39.8	80	53	49.8	7,265
Road crossing	32	38	08.5	80	53	25.9	3,545
Milepost 51	32	39	05.4	80	52	38.4	7,040
Road crossing	32	39	52.0	80	51	59.5	5,760
Road crossing	32	40	25.2	80	50	31.8	4,105
Intersection of Charleston & Western Carolina and Atlantic Coast Line railroads	32	41	15.8	80	50	49.6	6,269
Yemassee, 220 feet from intersection of Atlantic Coast line and Charleston & Western Carolina railroads, 100 feet S. 50° E. from Atlantic Coast Line R. R., at rear of car and tool house, in open ground; iron post stamped "Prim. Trav. Sta. No. 4, 1917 Mac." Azimuth to left-hand corner of three-story brick building, 57° 43′; to right-hand corner of brick chimney on residence, near gables, 122° 23′ 30″	32	41	16.8	80	50	47.2	220
Yemassee station, 1.45 mile S. 50.5° E. (true) from, at intersection of two long tangents on Charleston & Western Carolina Ry., in pine woods, on low ground, about 2 inches under surface of ground; a 2-foot draintile set in cement with nail in center (U. S. Coast and Geodetic Survey station B)	32	40	28.1	80	49	41.1	7,587
Yemassee siding, switch at north end of	32	41	48.5	80	50	22.3	3,844
Trestle bridge over Combahee River, center of stream	32	42	14.8	80	49	34.7	4,855
Salkehatchie flag station, road crossing at	32	42	21.0	80	48	46.6	4,165
Milepost 58	32	42	32.6	80	47	18.0	7,650
Blake siding, road crossing at	32	42	39.6	80	46	24.0	4,671

North along highways near west border of quadrangle. (By E. L. McNair in 1917.)

Definite angle in road, center lines both ways	32	30	16.7	80	59	27.0	
Forks of road, in line three ways	32	30	34.6	80	59	37.0	2,000
Intersection with road from Coosawhatchie to Gillisonville	32	36	06.6	80	59	30.2	
Forks of road, in line with roads north and east	32	37	05.6	80	59	42.7	
T road corner	32	40	11.2	80	59	04.0	
T road northwest to Cypress Creek	32	41	02.0	80	58	34.4	5,720
Jasper and Hampton county line, stream crossing, north end of long bridge	32	41	50.2	80	57	57.4	5,815
T road corners, on Yemassee and Hampton road, near road northeast to Early Branch	32	43	03.8	80	57	13.2	8,339
Forks of road	32	44	16.2	80	56	19.1	8,655
Early Branch station, at south end of, public-road crossing on Charleston & Western Carolina Ry.	32	44	44.9	80	55	49.2	3,862
Angle of 21° in road, on center line both ways, opposite opening in fence on north side	32	44	53.0	80	54	04.6	8,977
Early Branch station, 2.5 miles east of, on Charleston & Western Carolina Ry., on east side of Beaufort and Barnwell road, in line with T road west to Early Branch; iron post stamped "Prim. Trav. Sta. No. 31 Mac., 1917"	32	44	44.7	80	53	18.4	4,032
Road forks	32	43	26.3	80	52	43.6	8,460
Road forks	32	42	34.2	80	51	53.9	6,765
T road west	32	42	18.2	80	51	36.2	2,215
Angle in road, on center line both ways, opposite front door of church on east side of road	32	41	48.8	80	51	03.9	4,057
Yemassee, Prim. Trav. Sta. No. 4 (described above)	32	41	16.8	80	50	47.2	3,530

YEMASSEE QUADRANGLE—Continued.

Along highways near south border of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Road fork at negro church	32	30	43.0	80	55	53.3	5,790
Crossroads	32	31	31.8	80	53	51.4	11,534
Forks of road, second-class road S. 70° E	32	30	50.8	80	53	21.5	4,870
Boyds Creek, 1,100 feet southwest of Seaboard Air Line girder bridge over, 2,300 feet east of house of Caesar Huegenius (negro), 251 feet north and 30 feet west of farm-road crossing, on fence line between two fields; iron post stamped "Prim. Trav. Sta. No. 32 Mac., 1917"	32	30	11.8	80	51	51.8	8,625

Northeast along Seaboard Air Line Ry.

Road crossing	32	30	33.8	80	51	28.8	3,002
Broad River, center of swing span in bridge over	32	31	17.0	80	50	17.8	7,445
Broad River, 6,000 feet north of, intersection of railroad tangents	32	31	52.7	80	49	19.6	6,146
Farm-road crossing	32	32	13.3	80	48	29.5	4,770
Intersection of long railroad tangents	32	32	31.2	80	47	46.0	4,138
Road crossing, second-class	32	32	38.4	80	46	48.2	5,000
Coosaw flag station, crossing of Charleston & Western Carolina Ry	32	32	41.6	80	46	23.0	2,187
Intersection of railroad tangents	32	32	46.8	80	45	40.9	3,638

Northwest along highways near north border of quadrangle.

Road fork	32	40	02.4	80	45	44.7	.....
Road fork	32	40	13.1	80	47	26.5	8,771
Crossroads	32	41	14.8	80	49	52.2	13,956
Yemassee, Prim. Trav. Sta. No. 4 (previously described)	32	41	16.8	80	50	47.2	4,712

Along highways near northeast corner of quadrangle. (By E. L. McNair in 1917.)

Angle of 22½° in road, on center lines	32	43	04.2	80	46	42.7	.....
T road south through gate to Blake Siding	32	43	55.7	80	46	55.2	5,320
Crossing of abandoned tramroad	32	44	36.4	80	45	42.6	7,439
Crossroads	32	44	56.6	80	45	06.7	3,681

NEW MEXICO.

TRIANGULATION STATIONS.

Canonlargo, Luera Spring, Pelona, Pinonville, and Reserve quadrangles.

SOCORRO COUNTY.

In 1915 C. B. Kendall extended triangulation from stations Jordan, Tularosa, and Fox eastward over the Pelona quadrangle. Mr. Kendall occupied five new stations and located six points by intersections, all based on North American datum.

For work of 1913–14, in this locality see Bulletin 644 B.

DIVIDE, SOCORRO COUNTY, N. MEX. (Not occupied.)

In T. 4 S., R. 15 W., sec. 14, on the highest point of a low, timbered ridge between Patterson Canyon and Tularosa River. It is about 8 miles west and 3 miles north of Horse Springs and 3.5 miles northeast of a point on the Continental Divide where the Magdalena and Reserve stage road branches northeast to Luna and Jewett Ranger Station. It is on or very near the Continental Divide.

Signal and station mark: Flag in top of pine tree.

[Latitude 33° 57′ 53.05″. Longitude 108° 22′ 14.22″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Patterson	36 44 55	216 41 53	4.14532	8.683
Fox	112 14 15	292 02 28	4.52276	20.706
Horse	266 38 15	86 46 26	4.35431	14.050

ELK, SOCORRO COUNTY, N. MEX. (Not occupied.)

In T. 8 S., R. 15 W., sec. 31, on summit of Elk Mountain, which is a well-known and very prominent mountain about 3 miles west of the old O-Bar-O ranch.

Station mark and signal: Flag in highest tree on summit.

[Latitude 33° 34′ 19.96″. Longitude 108° 25′ 13.42″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ″	*Log. meters.*	*Miles.*
Tularosa	128 42 39	308 36 31	4.26942	11.555
Pelona	248 35 14	68 45 46	4.49929	19.617
O-Bar-O	256 16 06	76 19 47	4.01316	6.405
Indian	271 27 56	91 41 29	4.57869	23.552

FOX, SOCORRO COUNTY, N. MEX.

In or near sec. 4, T. 3 S., R. 18 W., on the highest point of "The Fox" Mountain, a high, round, bare peak overlooking the country for miles in every direction. Several canyons head against the peak: Perry Lawson on the southeast, American on the northwest, and Des Meter on the northeast. It is about 3 miles west of Jewett Gap and 10 miles northwest of Jewett Ranger Station and H. N. ranch. It is an excellent natural

triangulation station, as it overlooks the American, Salt Lake, and Agua Frio valleys and the Johnson Basin. It is easily ascended by following a Forest Service trail from Jewett Gap.

Signal: A cairn 4 feet high, around which was built a quadripod of poles. A bushy pine tree was set over center.

Station mark: A bronze triangulation tablet set in a 6 by 8 by 24 inch stone buried in ground, over which was built a cairn 4 feet high.

[Latitude 34° 04′ 40.51″. Longitude 108° 42′ 17.41″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pinon	239 03 10	59 11 01	4.41162	16.031
Horse	281 44 03.14	102 03 28.50	4.7371852	33.926
Divide	292 02 28	112 14 15.	4.52276	20.706
Patterson	316 26 26.00	136 34 36.56	4.5151502	20.347
Whiterocks	26 17 06.92	206 05 49.17	4.8514387	44.135
Turner Peak	56 21 22	236 09 59	4.57648	23.434
Escadillo	69 30 17.81	249 16 18.98	4.6139437	25.544
Apache	331 33 50	151 36 39	4.21161	10.115
Tularosa	345 02 13.01	165 06 30.19	4.6630428	28.602

HORSE, SOCORRO COUNTY, N. MEX.

In T. 4 S., R. 12 W., sec. 7, on the more northern and higher of the two peaks of Horse Mountain, a well-known and very prominent landmark. It is 7 miles northwest of Horse Springs and 3.5 miles north of Gutierrez's ranch, both on the Magdalena and Reserve stage road. An old cairn 4 feet high was found on the summit and was probably a point used by the Wheeler Survey. The cairn was removed and the new station built in the same place.

Signal: Cairn.

Station mark: Standard bronze tablet in 8 by 8 inch stone, set 2 feet in the ground, over which was built a cairn 8 feet high with a pine tree in the center.

[Latitude 33° 58′ 35.22″. Longitude 108° 07′ 34.90″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
O-Bar-O	22 09 25.74	202 03 13.55	4.6604700	28.433
Tularosa	51 34 24.38	231 19 21.91	4.7267775	33.123
Mayberry	56 12 23	236 07 53	4.17545	9.307
Patterson	68 05 40.82	247 54 28.59	4.5233970	20.737
Divide	86 46 26	266 38 15	4.35431	14.050
Fox	102 03 28.50	281 44 03.14	4.7371852	33.926
Pinon	128 12 39	308 01 16	4.59874	24.666
Luera	305 52 13	126 00 32	4.45327	17.645
Shaw	339 43 11	159 46 00	4.35338	14.020
Indian	346 59 14.56	167 03 03.02	4.6728718	29.256
Pelona	356 20 19.58	176 21 05.70	4.5240023	20.766

INDIAN, SOCORRO COUNTY, N. MEX.

In T. 9 S., R. 11 W., sec. 6, on the highest and most southwestern of the Indian Peaks, at the head of Kennedy Canyon, about 4 miles northeast of the North Star Ranger Station, and about 4 miles south of Juan Garcia's ranch on Railroad Canyon. The North Star Ranger Station road to the Adobe passes about 0.7 mile north of station. A ranger trail leads from this road to station, which is used as a fire-lookout station by the U. S. Forest Service.

Station mark: Bronze tablet in solid rock on highest point of peak.

Signal: Lone pine tree 25 feet high with flags and targets. Tree stands 8.2 feet distant, true azimuth 261° 19′, from station mark.

[Latitude 33° 33′ 46.06″. Longitude 108° 00′ 43.89″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Jordan	44 18 28.35	224 11 23.00	4.4564516	17.775
Elk	91 41 29	271 27 56	4.57869	23.552
O-Bar-O	97 12 52.76	277 02 55.26	4.4483591	17.446
Tularosa	103 44 30.54	283 25 45.37	4.7315100	33.486
Pelona	145 59 56.36	325 56 54.66	4.1794729	9.393
Horse	167 03 03.02	346 59 14.56	4.6728718	29.256
Shaw	173 38 18	353 36 17	4.39552	14.448
Luera	203 05 53	23 09 20	4.50226	19.752

JORDAN, SOCORRO COUNTY, N. MEX.

On highest point of Black Mountain, at head of Jordan Canyon, Eastwater Creek, and Long Canyon; it is about 7 miles northwest from D D Bar ranch and about 16 miles north of the X S X ranch, both on the eastern fork of Gila River.

Station mark: A bronze triangulation tablet cemented in rock.

Signal: A live pine tree about 40 feet high, true azimuth 187° 17′, distant 9.5 feet from station.

[Latitude 33° 22′ 40.94″. Longitude 108° 13′ 36.90″.]

To station—	Azimuth.	Back azimuth.	Distance.1	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chalk (R)	33 42 57.21	213 38 05.59	4.3943663	15.407
Mogollon (R)	71 01 50.16	250 49 43.88	4.5584409	22.480
Deer (R)	241 20 31.33	61 35 37.65	4.6837430	29.998
Juan (R)	261 45 02.44	82 06 13.86	4.7799314	37.435
Diamond (R)	294 43 12.77	114 55 49.24	4.5940740	24.402
Black (R)	353 19 59.57	173 22 07.33	4.7185815	32.503
Copperas (R)	355 29 08.60	175 29 57.87	4.4713362	18.395
Tularosa (K)	135 40 17.18	315 28 40.74	4.6666789	28.842
O-Bar-O (K)	161 42 56.13	341 40 06.59	4.4023472	15.693
Pelona (K)	199 08 09.12	19 12 13.84	4.5435475	21.722
Indian (K)	224 11 23.00	44 18 28.35	4.4564516	17.775

R=Robertson in 1911; K=Kendall in 1915.

LUERA, SOCORRO COUNTY, N. MEX. (Not occupied.)

On highest point of Luera Mountain.

Station mark and signal: Highest tree on summit.

[Latitude 33° 49′ 34.68″. Longitude 107° 52′ 40.74″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Indian	23 09 20	203 05 53	4.50226	19.752
Pelona	51 24 57	231 17 26	4.42768	16.635
Horse	126 00 32	305 52 13	4.45327	17.645

MAYBERRY, SOCORRO COUNTY, N. MEX. (Not occupied.)

In T. 5 S., R. 14 W., sec. 2; a low, sharp, isolated peak on the Plains of San Agustin, 2.25 miles southwest of Horse Springs, 3 miles northeast of the T U T ranch or Patterson ranch, and 1 mile south of the Magdalena and Reserve stage road.

Signal: Cairn.

Station mark: Standard bronze tablet in solid rock, over which was built a cairn 8 feet high with a pine tree in center.

[Latitude 33° 54′ 04.54″. Longitude 108° 15′ 29.54″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
O-Bar-O	7 57 49	187 56 07	4.53639	21.368
Patterson	77 23 28	257 16 14	4.27803	11.786
Horse	236 07 53	56 12 23	4.17545	9.307
Pelona	329 41 08	149 46 24	4.46184	17.996

O-BAR-O (O—O), SOCORRO COUNTY, N. MEX.

In T. 8 S., R. 14 W., near southwest corner of sec. 20, on the highest point of O-Bar-O Mountain, which is at the head of Y Canyon and is 7.5 miles south of the Y ranch and 3 miles northeast of the old O-Bar-O (O—O) ranch.

Signal: Pole quadripod and cairn.

Station mark: Standard bronze tablet in solid rock, over which was built a pole quadripod and cairn.

[Latitude 33° 35′ 39.20″. Longitude 108° 18′ 44.20″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Elk	76 19 47	256 16 06	4.01316	6.405
Tularosa	110 34 32.16	290 25 44.93	4.4181336	16.274
Mayberry	187 56 07	7 57 49	4.53639	21.368
Horse	202 03 13.55	22 09 25.74	4.6604700	28.433
Shaw	229 40 04	49 49 05	4.51650	20.410
Pelona	244 55 57.48	65 02 54.09	4.3302125	13.291
Indian	277 02 55.26	97 12 52.76	4.4483591	17.446
Jordan	341 40 06.59	161 42 56.13	4.4023472	15.693

PATTERSON, SOCORRO COUNTY, N. MEX.

In T. 5 S., R. 16 W., sec. 24, on the highest point of a timbered ridge, which is the divide between Gavino Canyon and Tularosa Creek. It is 3.5 miles west of the Dark Canyon ranch, 5 miles east of Aragon post office, and 4 miles east of the Magdalena and Reserve stage road.

Signal: Flags and target in a forked pine tree, which was trimmed to within 15 feet of the top and is 19.5 feet, true azimuth 203° 48′, from station. Summit around station was cleared so that sights were obtained in all directions.

Station mark: Standard bronze tablet in boulder at highest point of ridge.

[Latitude 33° 51′ 49.48″. Longitude 108° 27′ 39.52.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tularosa	27 22 56.27	207 19 04.74	4.3678863	14.496
Fox	136 34 36.56	316 26 26.00	4.5151502	20.347
Pinon	179 27 31	359 27 23	4.56820	22.990
Divide	216 41 53	36 44 55	4.14532	8.683
Horse	247 54 28.59	68 05 40.82	4.5233970	20.737
Mayberry	257 16 14	77 23 28	4.27803	11.786
Pelona	302 05 08.03	122 17 03.69	4.5926712	24.323

PINON, SOCORRO COUNTY, N. MEX. (Not occupied.)

The highest peak of the Datil Range, in Socorro County, N. Mex. It was sparsely timbered on top and has been cleared, leaving a small signal tree near the top. Observations were taken at the highest point and were reduced to the tree. Some of the trees growing on the side are about as high as the top of the mountain and might be mistaken for the signal tree from some directions. The mountain is easiest climbed from the southeast. Station was published by the Wheeler Survey under the name of Alamocita.

[Latitude 34° 11′ 50.54″. Longitude 108° 27′ 53.20″. (Kendall's value).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Square Mesa (B)	188 26 44.1	8 33 02.9	5.0589954	.....
Taylor (B)	213 55 50.8	34 25 07.8	5.1450548	.....
Crofton (B)	151 52 40.8	331 30 29.0	5.0989330	.....
Ords Peak (B)	75 00 27.5	254 22 08.7	5.0378288	.....
Tularosa (B)	10 11 31.6	190 07 46.8	4.7681763	.....
Fox (K)	59 11 01	239 03 10	4.41162	16.031
Horse (K)	308 01 16	128 12 39	4.59874	24.666
Patterson (K)	359 27 23	179 27 31	4.56820	22.990

B=Bulletin 122, K=by Kendall in 1915.

PELONA, SOCORRO COUNTY, N. MEX.

In T. 7 S., R. 12 W., sec. 29, on the highest point of Pelona Mountain, which is very prominent and is 9 miles southeast of the Fullerton ranch, 6 miles northwest of Juan Garcia ranch, and 5 miles west of Farris sheep camp and the lake at the head of Shaw Canyon.

Station mark: Standard bronze tablet in solid rock.

[Latitude 33° 40′ 32.72″ Longitude 108° 06′ 12.06″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Jordan	19 12 13.84	199 08 09.12	4.5435475	21.722
O-Bar-O	65 02 54.09	244 55 57.48	4.3302125	13.291
Elk	68 45 46	248 35 14	4.49929	19.617
Tularosa	90 18 02.65	270 02 17.79	4.6424129	27.275
Patterson	122 17 03.69	302 05 08.03	4.5926712	24.323
Mayberry	149 46 24	329 41 08	4.46184	17.998
Horse	176 21 05.70	356 20 19.58	4.5240023	20.766
Shaw	205 01 29	25 03 32	4.12854	8.354
Luera	231 17 26	51 24 57	4.42768	16.635
Indian	325 56 54.66	145 59 56.36	4.1794729	9.393

SHAW, SOCORRO COUNTY, N. MEX. (Not occupied.)

In T. 6 S., R. 12 W., sec. 14, approximately highest point on the smooth, hard ridge lying between the mouth of Shaw Canyon and the next canyon east and extending into the Plains of San Agustin. It is 3 miles south and 1 mile east of Crawford ranch on the Magdalena and Mogollon road and can be best approached from the south.

Station mark and signal: Cairn 8 feet high.

[Latitude 33° 47′ 08.22″. Longitude 108° 02′ 30.92.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pelona	25 03 32	205 01 29	4.12854	8.354
O-Bar-O	49 49 05	229 40 04	4.51650	20.410
Horse	159 46 00	339 43 11	4.35338	14.020
Indian	353 36 17	173 38 18	4.39552	14.448

TULAROSA (EAGLE PEAK), SOCORRO COUNTY, N. MEX.

Station is on the highest peak of the Tularosa Mountains, locally known as Eagle Peak, under which name it was occupied by the Wheeler Survey. It is in T. 7 S., R. 17 W., sec. 22, approximately, and is at the head of Long Canyon on the north and Salthouse Canyon on the south. Both canyons head in a saddle about one-fourth of a mile west of the station. The Forest Service trail from Tularosa Ranger Station to Nigrito Ranger Station crosses the mountains through the saddle. There is a ranger cabin in saddle, from which a trail and telephone line lead east uphill to station. Station is about 11 miles east of Reserve and 15 miles south and 4 miles west of Aragon on the Magdalena public road.

Signal: A pole set over tablet and carrying flags; around the pole was erected a quadripod with white cloth around top, and between this and the flag were placed pine boughs. Three targets of red cloth were placed on the sides of quadripod north, south, and west.

Station mark: A bronze triangulation tablet in a 6 by 8 by 24 inch stone set in ground, over which is erected a cairn 5 feet high.

[Latitude 33° 40′ 36.94″. Longitude 108° 34′ 36.04″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mogollon	2 04 17.05	182 03 42.39	4.6532044	27.961
Bearwallow	18 40 08	198 37 06	4.42536	16.547
Pleasant	38 59 06.02	218 47 07.16	4.7289620	33.290
Sunset	44 43 04.81	224 21 35.98	4.9358163	53.601
Whiterocks	66 09 32.71	245 54 03.26	4.6758515	29.408
Brushy Mountain	80 18 32	260 04 26	4.60118	24.804
Box	120 26 48.54	300 18 50.28	4.4098781	15.907
Escadillo	120 54 03.64	300 35 52.42	4.7685262	36.465
Fox	165 06 30.19	345 02 13.01	4.6630428	28.602
Apache	172 16 04	352 14 35	4.48336	18.911
Patterson	207 19 04.74	27 22 56.27	4.3678863	14.496
Horse	231 19 21.91	51 34 24.38	4.7267775	33.123
Pelona	270 02 17.79	90 18 02.65	4.6424129	27.275
Indian	283 25 45.37	103 44 30.54	4.7315100	33.486
O-Bar-O	290 25 44.93	110 34 32.16	4.4181336	16.274
Elk	308 36 31	128 42 39	4.26942	11.555
Jordan	315 28 40.74	135 40 17.18	4.6666789	28.842

Animas Peak, Antelope Wells, Big Hatchet Peak, Camel Mountain, Canutillo, Cienega Springs, Columbus, Dog Mountain, Hachita, Hermanas Mount Riley, Noria, Playas Pratt, Victorio, and Walnut Wells quadrangles.

DONA ANA, GRANT, AND LUNA COUNTIES.

During the year 1917 George T. Hawkins, C. L. Nelson, and B. H. Yoakum extended triangulation over the above-named quadrangles. Ninety-six stations were located on North American datum based upon Hermanas. Near, and South Base of the U. S. Coast and Geodetic Survey.

ANIMAS, GRANT COUNTY, N. MEX.

On the northern of the two highest points on the Animas Mountains. The point is partly cleared of timber and is about 1 mile north of a rounded summit which is probably a little higher. Station can best be reached from the Double Adobe ranch house and spring on the north or from Gray's ranch on the west side of the range.

Station mark: Bronze tablet in solid rock on highest point of peak, 120 feet from signal; true azimuth from mark to signal, 121° 20′.

Signal: Two large pine trees with branches interlaced forming oval top.

[Latitude 31° 34′ 48.64″. Longitude 108° 47′ 00.36″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Corner	36 16 51.99	216 10 26.51	4.5184567	20.502
Rocky	45 43 54.20	225 39 08.90	4.3037073	12.504
Baldy	130 43 22.65	310 38 48.40	4.2593789	11.291
Gray	158 06 13.07	338 01 50.16	4.5469847	21.894
North Animas	213 40 53.57	33 44 07.60	4.2444633	10.910
O. K.	288 25 48.10	108 30 37.57	4.1869407	9.556
Lang	354 35 13.92	174 36 03.18	4.4221204	16.424

ANIMAS MILL, GRANT COUNTY, N. MEX. (Not occupied.)

Windmill half a mile south of Animas station on El Paso & Southwestern R. R., on the west side of mail road, and near two small red-roofed houses.

Station mark: Well.

Signal: Windmill over well.

[Latitude 31° 56′ 07.33″. Longitude 108° 48′ 22.40″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gray	58 39 02	238 35 21	4.10930	7.992
Playas	252 52 18	72 56 39	4.13829	8.544
North Animas	334 20 43	154 24 41	4.43901	17.075

ANTELOPE, GRANT COUNTY, N. MEX. (Not occupied.)

On a sharp peak about 4 miles northwest of Pratt station on the El Paso & Southwestern R. R.

Station mark: None.

Signal: Bamboo cone covered with white cloth.

[Latitude 31° 57′ 22.75″. Longitude 108° 57′ 15.58″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Playas	266 17 34	86 26 41	4.43447	16.898
North Animas	316 13 29	136 22 03	4.57390	23.295
Gray	341 25 43	161 26 44	3.97844	5.913

APACHE, GRANT COUNTY, N. MEX.

On a prominent, rocky peak three-fourths of a mile south of corner of secs. 16, 17, 20, and 21, T. 29 S., R. 14 W., and 10 miles southeast of Hachita.

Station mark: Bronze tablet.

Signal: Built of juniper brush over center.

[Latitude 31° 46′ 14.37″. Longitude 108° 16′ 45.15.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Big Hatchet	37 01 44.72	216 57 59.11	4.2738092	11.672
Little Hatchet	115 36 53.69	295 31 23.91	4.2611557	11.337
Rica	175 18 39.11	355 18 26.04	3.9016708	4.955
Near	256 35 2.73	76 38 20.48	3.9652408	5.736
Cabin	339 48 00.92	159 50 05.81	4.2587584	11.275

BALDY, GRANT COUNTY, N. MEX.

On the east summit of a double peak, about 20 miles southwest of Animas railroad station and 6 miles nearly west from the Hatfield ranch in the Animas Valley.

Station mark: Cross cut in solid rock.

Reference mark (1): Arrow 8 feet E., pointing to center.

Reference mark (2): Arrow 10.3 feet S., pointing to center.

Signal: Built of juniper brush over station.

[Latitude 31° 41′ 13.25″. Longitufe 108° 55′ 43.24″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rocky	1 20 12.52	181 20 00.53	4.4134567	16.099
Gray	181 39 27.29	1 39 39.37	4.3190780	12.955
X—T	239 36 55	59 40 46	4.12549	8.295
North Animas	263 14 19.00	83 22 08.07	4.3741838	14.707
Animas	310 38 48.40	130 43 22.65	4.2593789	11.291
Mill	326 28 40	146 30 39	4.03383	6.717

BIG HAT, GRANT COUNTY, N. MEX. (Not occupied.)

Station is near center of low, flat-topped mountain, locally known as Hat Top, which is 4 miles southwest of Campbell's well, 4½ miles north of international boundary, and 2 miles east of Dog Springs.

Station mark and signal: Built of yucca stalks and juniper brush over large flat rock.

[Latitude 31° 23′ 51.60″. Longitude 108° 15′ 15.70″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Sycamore	91 44 29	271 43 05	3.81388	4.048
Big Hatchet	152 35 32	332 31 01	4.47269	18.452
Cabin	189 07 36	9 08 54	4.39160	15.309

BIG HATCHET, GRANT COUNTY, N. MEX.

On highest point of the Big Hatchet Mountains, locally known as Big Hatchet Peak. About 4 miles south and 4 miles west of Dallas Hatchet headquarters ranch. To reach station from the headquarters ranch, take old wood road to the head of Thompson Canyon, then follow main ridge to the right.

Station mark: Bronze tablet set in solid rock on highest point, 9 feet south of signal, true azimuth from mark to signal, is 190° 42′.

Signal: Cairn.

[Latitude 31° 38′ 07.26″. Longitude 108° 23′ 54.43.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hylo	35 07 35.11	215 01 21.13	4.5165727	20.414
Walnut Wells	47 45 21	227 41 45	4.16779	9.144
O. K.	63 28 25.52	243 21 09.31	4.3901385	15.258
North Animas	107 40 10.26	287 31 16.72	4.4483934	17.448
Little Hatchet	167 16 44.63	347 15 01.31	4.3702262	14.574
Rica	204 51 33.06	24 55 05.85	4.4031134	15.720
Apache	216 57 59.11	37 01 44.72	4.2738092	11.672
Near	229 45 16.16	49 52 01.23	4.4242331	16.504
Sheridan	309 21 46	129 24 43	4.06240	7.174
Cabin	276 31 58.91	96 37 48.67	4.2478538	10.995
Big Hat	332 31 01	152 35 32	4.47269	18.452
Sycamore	344 37 40.50	164 40 02.74	4.4332433	16.850
Pierce	347 01 47	167 03 16	4.30350	12.498

BORDER, GRANT COUNTY, N. MEX.

Station is on northwest and lower apex of rocky, double peak on east side of Playas Valley, 2 miles east of Antelope Wells and half a mile north of the United States and Mexico boundary line. It is one-fourth of a mile east of quarter section corner between secs. 17 and 20.

Station mark: Bronze tablet in solid rock under center of signal.

Signal: Quadripod of bamboo poles covered with white cloth.

[Latitude 31° 20′ 26.43″. Longitude 108° 28′ 54.27″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lang	90 35 52	270 27 16	4.41860	16.291
Hylo	117 48 14	297 44 38	4.09392	7.714
Sycamore	246 35 38	66 39 56	4.21619	10.222

BORDERLAND, EL PASO COUNTY, TEX. (Not occupied.)

Sighted from two stations only. Center of galvanized water tank at Borderland Inn, which is 3 miles south of Canutillo post office, Tex.

Station mark: Center of tank.

Signal: Same.

[Latitude 31° 53′ 07.80″. Longitude 106° 35′ 46.48″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Canutillo	118 03 20	298 00 34	3.97069	5.799
North Franklin	258 45 50	78 49 06	3.99647	6.154

BOUNDARY MONUMENT NO. 2, DONA ANA COUNTY, N. MEX.

[Latitude 31° 47′ 01.642″ (C); 31° 47′ 01.644″. Longitude 106° 32′ 13.111″ (C); 106° 32′ 13.120.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mastodon	92 22 26.04	272 18 25.66	4.0797654	7.466
Canutillo	138 32 20.23	318 27 41.92	4.3206237	13.001
Mesa (C)	278 00 40	98 06 55.60	4.277837	.....
North Franklin	197 20 00.88	17 21 23.64	4.1409799	8.597
(C)	197 19 56.8	17 21 19.60	4.141011	8.597

C=data by U. S. Coast and Geodetic Survey.

BOUNDARY MONUMENT NO. 10, DONA ANA COUNTY, N. MEX. (Not occupied.)

A monument on the United States and Mexican boundary line about 2 miles south of Mount Riley, a station on the El Paso & Southwestern R. R. Sighted from two stations only.

Station mark: Stone monument.

Signal: Same.

[Latitude 31° 47′ 01.16″. Longitude 107° 04′ 43.00″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rat	105 42 23	285 38 49	4.04582	6.905
Riley	185 23 45	5 24 15	4.19978	9.834

BOUNDARY MONUMENT NO. 67, GRANT COUNTY, N. MEX. (Not occupied.)

A concrete post of about 4 feet base and 12 feet high, on a small elevation near the middle of Animas Valley, on United States and Mexico boundary.

[Latitude 31° 19′ 56.18″. Longitude 108° 51′ 48.44″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Corner	94 12 23	274 08 29	4.07706	7.401
Rocky	153 08 08	333 05 54	4.17773	9.356
Lang	263 21 13	83 24 46	4.00765	6.324

BRUSH, GRANT COUNTY, N. MEX. (Not occupied.)

On a comparatively low bald hill about 10 miles northeast of Hachita.
Station mark: Cairn of 7-foot base and 6 feet high.
Signal: Same.

[Latitude 31° 59′ 28.85″. Longitude 108° 14′ 39.96″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rica	13 25 26	193 24 07	4.23010	10.555
W	298 30 34	118 35 19	4.20728	10.015
Near	345 42 32	165 44 38	4.36260	14.321

BUM, GRANT COUNTY, N. MEX. (Not occupied.)

On a foothill of the Little Hatchet Mountains, on the east side of Playas Valley, and 1½ miles north of road leading from Hachita through pass to Playas Valley.
Station mark and signal: Cairn.

[Latitude 31° 51′ 05.28″. Longitude 108° 30′ 44.61″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
North Animas	45 53 55	225 48 36	4.34670	13.806
Playas	132 23 14	312 18 19	4.29703	12.313
Little Hatchet	280 55 37	.....	3.75766	3.5556

CABIN, LUNA COUNTY, N. MEX.

At Lone Cabin ranch, in Hachita Valley, 4 miles southeast of Richen's ranch and one-fourth of a mile west of the United States and Mexico boundary line. Lone Cabin ranch proper has a small adobe house, one windmill and pump, one mill tower (no pump), earth water tank, and several cottonwood trees.
Station mark: A 4-inch iron well casing under center of signal.
Signal: Windmill tower.

[Latitude 31° 37′ 01.41″. Longitude 108° 12′ 47.43″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Big Hat	9 08 54	189 07 36	4.39160	15.309
Sycamore	23 23 36.38	203 20 10	4.4195581	16.327
Sheridan	58 34 11	238 31 19	4.00658	6.309
Big Hatchet	96 37 48.67	276 31 58.91	4.2478538	10.995
Apache	159 50 05.81	339 48 00.92	4.2587584	11.275

CLIFF, GRANT COUNTY, N. MEX. (Not occupied.)

On a high rocky peak 7 or 8 miles southeast of Animas station, on El Paso & Southwestern R. R.
Station mark: Tablet in solid rock.
Signal: Cairn over tablet.

[Latitude 31° 52′ 44.23″ Longitude 108° 42′ 13.94″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gray	88 50 01	268 43 06	4.31540	12.845
Playas	.....	18 36 47	4.03612	6.753
North Animas	353 14 23	173 15 07	4.27070	11.584

CLOVERDALE, GRANT COUNTY, N. MEX. (Not occupied.)

On a sharp rocky peak near the Arizona and New Mexico State line and 5 miles northwest of Cloverdale postoffice. Sighted from two points only.

[Latitude 31° 25′ 46.42″. Longitude 109° 02′ 38.62″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rocky	255 40 04	75 43 29	4.02921	6.646
Corner	331 58 41	152 00 25	4.05051	6.980

CONE, LUNA COUNTY, N. MEX.

On a cone-shaped peak about 6½ miles north of Hermanas, a station on the El Paso & Southwestern R. R., and 2½ miles east from Gibson's ranch.

Station mark: Cairn of 8-foot base and 6 feet high on highest point of peak.

Signal: Same.

[Latitude 31° 57′ 17.66″. Longitude 108° 01′ 28.02″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
W	61 08 56.78	241 06 43.02	3.8799030	4.713
Cedar	96 34 06.96	276 29 06.83	4.1756713	9.312
Hermanas	336 40 24.82	156 42 50.42	4.2627836	11.380

CORNER, GRANT COUNTY, N. MEX.

On a low hill, about 1 mile northeast of point where Arizona and New Mexico corner on the United States and Mexico boundary, about 8 miles southwest of Cloverdale post office, and one-third of a mile north of international boundary post No. 70.

Station mark: Bronze tablet in solid rock.

Signal: Cairn of 6-foot base, 6½ feet high, 6½ feet from center. True azimuth from mark to signal, 78° 46′.

[Latitude 31° 20′ 24.40″. Longitude 108° 59′ 18.97″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Cloverdale	152 00 25	331 58 41	4.05051	6.980
Rocky	202 03 50.60	22 05 31.06	4.1320684	8.422
Animas	216 10 26.51	36 16 51.99	4.5184567	20.502
Lang	269 09 05.21	89 16 18.48	4.3428206	13.683
Monument No. 67	274 08 29	94 12 23	4.07706	7.401

COX, DONA ANA COUNTY, N. MEX. (Not occupied.)

On southwest peak of the Mount Riley group. Sighted from two stations.

Station mark: None.

Signal: Juniper tripod.

[Latitude 31° 54′ 51.53″. Longitude 107° 04′ 57.37″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Riley	235 30 17	55 30 54	3.35514	1.408
Jim	314 48 15	134 51 03	4.06898	7.283

DEMING SOUTH BASE, GRANT COUNTY, N. MEX.

A U. S. Coast & Geodetic Survey station, about 15 miles S. 15° W. from Deming, a town on the Southern Pacific R. R., 1½ miles S. 83° E. from the Midway switch on the Deming branch of the El Paso & Southwestern R. R., 1¾ miles N. 75° E. from the ranch house and windmills of R. W. Yeargins, and on F. W. Schweiyer's ranch.

The marking at this station is very similar to that at Deming north base. The reference mark is 16.58 meters from the station in azimuth 10° 53′. Schweiyer's house is about 300 meters from the station in azimuth 79° 54′.

[Latitude 32° 03′ 00.447″. Longitude 107° 50′ 14.406″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Wart	17 38 24	197 37 17	4.03796	6.781
Yellow	49 17 43	229 15 27	3.94870	5.521
Waterloo	288 31 56.38	108 37 58.37	4.2764627	11.744
Chloride	327 15 31.81	147 18 48.58	4.2564169	11.214
McLaurin	346 22 44	166 24 04	4.22519	10.436
Skewed	349 56 23	169 56 51	3.81104	4.022
Hermanas (C. & G. S.)	20 55 37.59	200 52 07.15	4.4669480	.....
Red (C. & G. S.)	164 23 37.80	344 21 52.88	4.2833279	.....
Cooks (C. & G. S.)	190 28 52.33	10 32 16.41	4.7387455	.....
Florida (C. & G. S.)	249 26 45.28	69 33 28.14	4.3269967	.....

DIVISION, LUNA COUNTY, N. MEX.

On low hill, 7 miles west of Columbus and 1 mile south of El Paso & Southwestern R. R.

Station mark: Iron bench-mark post.

Signal: Bamboo cone covered with white cloth over center.

[Latitude 31° 47′ 27.52″. Longitude 107° 44′ 04.52″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hermanas	93 53 57.23	273 47 12.66	4.3062921	12.579
Chloride	180 10 50.59	0 10 51.45	4.1319300	8.419
Stiles	263 08 21.57	83 12 11.69	4.0633681	7.190

CAMEL, LUNA COUNTY, N. MEX. (Not occupied.)

Sighted from two stations only. On a high hill, called Camel Mountain, 2 miles west of Birchfield's lower ranch.

Station mark: Cairn.

Signal: Same.

[Latitude 31° 47′ 34.85″. Longitude 107° 18′ 00.57″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Glorious	86 23 12	266 20 49	3.91078	5.060
Yoakum	167 38 02	346 36 10	4.37996	14.904

CANUTILLO, DONA ANA COUNTY, N. MEX.

Four miles west of Canutillo, Tex., railroad station and post office, 2 miles north of main road from El Paso, Tex., to Deming, N. Mex. (Borderland Highway), on top of Mesa Bluff at a point where a long narrow ridge from mesa projects farthest east into sand hill, 20 feet southwest of sharp rock edge of bluff. To reach station from the east by road, take wood-haulers' road from foot of sand hills on west side of

river valley and follow it west past an old, vacant, adobe house to foot of projecting point of mesa, which can be climbed on foot only at this point.

Station mark: Bronze tablet cemented in top of cement post, 5 inches square at top and 7 inches square at bottom, 2 feet long, and cased with 1-inch boards, which is set in ground with 2 inches projecting.

Signal: Quadripod of lumber 14 feet high and set in ground 2 feet. Instrument stand (tripod of lumber 12 feet high) is centered over station. Mark inside of signal.

[Latitude 31° 55′ 30.42″. Longitude 106° 41′ 00.46″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Strauss	13 08 08	193 07 37	3.83723	4.265
Crossing	48 13 30.50	228 11 32.86	3.8946118	4.875
Mill		247 22 55	3.96200	5.689
Mada	108 02 55.75	288 00 55.55	3.7977941	3.901
North Franklin	277 45 22.83	97 51 24.54	4.2587468	11.274
Borderland	298 00 34	118 03 20	3.97069	5.799
Monument No. 2	318 27 41.92	138 32 20.23	4.3206237	13.001
Mastodon	352 59 04.48	172 59 41.95	4.1845234	9.503

CEDAR, LUNA COUNTY, N. MEX.

On the highest peak in Cedar Mountain Range, about 10 miles northeast of the town of Hachita and 3 miles northwest of the Bud Williams ranch.

Station mark: Cross cut in ledge.

Reference marks: (1) Arrow pointing to center, 14.6′ west; (2) arrow pointing to center, 9.3′ southeast; (3) arrow pointing to center, 11.5′ north.

Signal: Juniper brush and white flag over center.

[Latitude 31° 58′ 12.97″. Longitude 108° 10′ 54.99″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Near	0 40 02.15	180 39 57.48	4.3009734	12.426
Rica	34 48 24.83	214 45 06.66	4.2373251	10.732
Little Hatchet	60 59 41.05	240 51 05.28	4.4674460	18.230
Vista	92 22 09.90	272 13 25.03	4.4157178	16.183
Cone	276 29 06.83	96 34 06.96	4.1756713	9.312
W	303 00 48.30	123 03 34.50	3.9930447	6.115

CHLORIDE, LUNA COUNTY, N. MEX.

On a high rocky peak in the Tres Hermanas Mountains. Azimuth from mark to signal, 256° 48′, distance 7.15 feet.

Station mark: Bronze tablet in solid rock.

Signal: A cairn 7 feet northeast from tablet.

[Latitude 31° 54′ 47.45″. Longitude 107° 44′ 02.89″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Division	0 10 51.45	180 10 50.59	4.1319300	8.419
Lava	53 54 48	233 51 23	4.10240	7.866
Hermanas	58 58 32.91	238 51 46.78	4.3732499	14.676
McLaurin	78 55 11	258 53 14	3.77210	3.677
Wart	110 08 48	290 04 25	4.14348	8.646
Skewed	135 38 21	315 35 27	4.09100	7.662
Deming South Base	147 18 48.58	327 15 31.81	4.2564169	11.214
Waterloo	221 42 24.69	41 45 09.37	4.0890761	7.628
Parks Mill	265 41 05	85 46 18	4.19237	9.677
Lone Mill	298 06 50	118 09 39	3.97971	5.929
Stiles	316 45 06.44	136 48 56.10	4.2228349	10.380

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CRATER, DONA ANA COUNTY, N. MEX.

Five miles east of Philips Wells and ranch house, 2 miles northeast of a large depression known as Kilbourne Hole, three-fourths of a mile south of road from Philips Wells to Afton, a station on the Southern Pacific R. R., 3 miles north of road from Lanark to Mount Riley, on west end of a low lava ridge, on south edge of rim of an old crater.

Station mark: Bronze tablet cemented in rock on edge of rim.

Signal: Cairn of lava rock, 7 feet high. True azimuth from mark to signal, 7 feet distant, 231° 22′.

[Latitude 32° 01′ 00.62″. Longitude 106° 56′ 35.93″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Jim	13 55 53.55	193 54 15.62	4.3058676	12.567
Riley	48 17 08.02	228 13 20.13	4.1803068	9.411
Lanark	293 32 16	113 36 32	4.11244	8.050
Sand	313 51 22.72	133 54 03.44	4.0434330	6.867
Herrington	329 34 15.06	149 37 40.63	4.3047132	12.533
Hunt	339 09 40	159 12 24	4.18300	9.470
Hunt Windmill	342 50 39	162 51 42	4.02369	6.562

CROSSING, DONA ANA COUNTY, N. MEX.

Two miles north and 3 miles west of Strauss, a station on the Southern Pacific R. R., 1 mile west of railroad crossing on main El Paso and Deming automobile road, 1,000 feet south of an old road leading from the above crossing to Noria and to Herrington's ranch, on main dividing sand ridge running southeasterly from above-mentioned old road. Station is on a sand bank slightly above general elevation, between two large bunches of mesquite, and nearer the west bunch. Azimuth from mark to signal 255° 05′, distance 5.1 feet.

Station mark: Iron bench-mark post, set in ground with 8 inches projecting above general level. The post is in the center of and covered 18 inches by a pile of sand, thrown up for elevating instrument.

Signal: Pieces of 2 by 4 inch lumber, spliced and bearing cross vanes, size 3 by 5 feet, covered with black cloth; the whole being 25 feet high and set 3 feet in the ground.

[Latitude 31° 52′ 40.68″. Longitude 106° 44′ 43.07″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Midway	31 36 25.42	211 34 52.87	3.9446633	5.470
Herrington	76 49 38.93	256 46 47.73	3.9422414	5.440
Mill	123 06 37	303 05 44	3.49418	1.939
Sand	125 45 33.88	305 41 57.45	4.1222548	8.234
Mada	179 01 31.72	359 01 29.30	3.8556734	4.457
Canutillo	228 11 32.86	48 13 30.50	3.8946118	4.875
Wieson	320 13 35	140 15 17	3.89846	4.913
Mastodon	322 10 22.53	142 12 57.40	4.1002078	7.826

DEAN, LUNA COUNTY, N. MEX. (Not occupied.)

Windmill at Dean's ranch, about 7 miles east of Columbus.

Station mark: Well.

Signal: Windmill over well.

[Latitude 31° 50′ 35.13″. Longitude 107° 31′ 06.83″.]

To station—	Azimuth.	Back azimuth.	Distance.1	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Truck	267 52 52	87 57 01	4.09369	7.710
Glorious	295 45 30	115 49 42	4.14441	8.665

FLAT, LUNA COUNTY, N. MEX. (Not occupied.)

Sighted from two stations only. About 5 miles east of Columbus and half a mile north of road.

Station mark: White signal.

Signal: Same.

[Latitude 31° 49′ 13.77″. Longitude 107° 31′ 48.23″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Yoakum	218 33 16	38 38 42	4.41430	16.131
Glorious	284 35 36	104 40 09	4.14933	8.764

GLORIOUS, LUNA COUNTY, N. MEX.

On hill about 2 miles southeast of Arena, a station on the El Paso & Southwestern R. R.

Station mark: Bronze tablet.

Signal: White.

[Latitude 31° 47′ 18.13″. Longitude 107° 23′ 09.46″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ″ ″	*Log. meters.*	*Miles.*
Stiles	94 28 58.83	274 21 47.67	4.3342866	13.416
Flat	104 40 09	284 35 36	4.14933	8.764
Dean	115 49 42	295 45 30	4.14441	8.665
Waterloo	132 57 25.25	312 49 07.43	4.5288744	21.000
P. B. M.	142 56 02	322 52 37	4.22914	10.531
Mesquite	161 21 44	341 19 14	4.36899	14.532
Truck	178 39 52	358 39 54	3.81430	4.052
Yoakum	186 07 57.25	6 08 48.85	4.3799923	14.905
Potrillo	227 17 33.07	47 22 39.88	4.3177819	12.916
Rat	262 16 21.46	82 22 30.19	4.2688755	11.541
Camel	266 20 49	86 23 12	3.91078	5.060

GRAY, GRANT COUNTY, N. MEX.

On high rocky peak, about 8 miles southwest of Animas station on El Paso & Southwestern R. R., 4 miles southwest of Pratt station and 4 miles southeast of Rodeo station.

Station mark: Cross cut in solid rock.

Reference marks: (1) Arrow pointing to center, 12.5 feet southwest; (2) arrow pointing to center, 15.2 feet west.

Signal: Built of Juniper brush over center.

[Latitude 31° 52′ 29.87″. Longitude 108° 55′ 20.30″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Baldy	1 39 39.37	181 39 27.29	4.3190780	12.955
Twin	40 21 55	220 20 04	3.93161	5.308
Antelope	161 26 44	341 25 43	3.97844	5.913
Animas Mill	238 35 21	58 39 02	4.10930	7.992
Playas	245 55 35.33	66 03 40.88	4.4217121	16.408
Cliff	268 43 06	88 50 01	4.31540	12.845
North Animas	308 15 06.66	128 22 44.89	4.4648111	18.120
Animas	338 01 50.16	158 06 13.07	4.5469847	21.894

HACHITA TANK, GRANT COUNTY, N. MEX. (Not occupied.)

Center of iron water tank (railroad property), about 100 yards east of Hachita railroad station.

Station mark: Center of tank.

Signal: Center of tank.

[Latitude 31° 55′ 06.43″. Longitude 108° 19′ 12.12″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Little Hatchet	55 57 19	235 53 06	4.18161	9.440
Vista	117 37 56	297 33 53	4.16579	9.102
Rica	339 09 44	159 10 48	3.95571	5.611

HERMANAS, LUNA COUNTY, N. MEX.

A Coast and Geodetic Survey station, on the highest of four hills, 3 miles S. 5° E. from Hermanas, a station and junction point on the El Paso & Southwestern R. R.

Reference mark: A cross cut in top of large high boulder, 11.68 meters from station, in azimuth 349° 10′.

Station mark: Disk cemented in solid rock.

[Latitude 31° 48′ 11.58″. Longitude 107° 56′ 52.33″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
W	133 28 47.56	313 24 08.55	4.2818464	11.890
Prospect	136 21 57	316 18 31	4.17251	9.744
Cone	156 42 50.42	336 40 24.82	4.2627836	11.380
Yellow	189 44 54	9 46 01	4.34042	13.608
Wart	202 48 49	22 51 08	4.26531	11.446
Chloride	238 51 46.78	58 58 32.91	4.3732499	14.676
Lava	244 39 01	64 43 10	4.04407	6.877
Division	273 47 12.66	93 53 57.23	4.3062921	12.579
Cooks	194 03 30.85	14 10 26.11	4.9231609	.....
Florida	221 00 37.83	41 10 49.94	4.6645871	.....
North Franklin	265 01 33.23	85 47 36.65	5.1401966	.....

HERRINGTON, DONA ANA COUNTY, N. MEX.

Four miles north-northeast of Noria, a station on the El Paso & Southwestern R. R., 25 miles west of El Paso, 3½ miles northeast of Herrington's ranch house and well, 1 mile east of an old road running from Herrington's ranch to Lanark, 1 mile south of an east-west fence line crossing this road, on highest part of dividing ridge having a a general direction of northeast and southwest, on top of a sand bump which is about 3 feet higher than the general elevation in the immediate vicinity.

Station mark: Iron bench-mark post set in ground with about 4 inches projecting.

Signal: Lumber spliced, with cross vanes 3 by 5 feet covered with white cloth at top, the whole being about 16 feet high and set 3 feet in the ground.

[Latitude 31° 51′ 35.78″. Longitude 106° 50′ 07.33″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Noria	.....	202 00 59	3.82391	4.142
Jim	81 37 17.18	261 32 14.40	4.1832661	9.476
Hunt	123 20 09	303 18 33	3.75864	3.564
Crater	149 37 40.63	329 34 15.06	4.3047132	12.533
Sand	167 03 44.68	347 02 59.68	3.9995908	6.208
Crossing	256 46 47.73	76 49 38.93	3.9422414	5.440
Midway	324 33 12.05	144 34 30.53	3.8293445	4.195

HOWE'S WINDMILL, GRANT COUNTY, N. MEX. (Not occupied.)

About halfway between Gray's ranch and Hatfield ranch. Belongs to Mr. Howe and is near his house, which has a tin roof.

Station mark: Well.

Signal: Windmill tower over well.

[Latitude 31° 36′ 20.58″. Longitude 108° 51′ 56.77″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rocky	21 17 56	201 16 05	4.25823	11.261
Baldy	146 30 39	326 28 40	4.03383	6.718
North Animas	236 05 46	56 11 36	4.32500	13.133

HUNT, DONA ANA COUNTY, N. MEX. (Not occupied.)

Station is 2½ miles southeast of Hunt's ranch (East Well), 1 mile north of east-west fence, and 2 miles northwest of a gate in this fence at an old road from Lanark to Herrington's ranch and to Noria; it is in center of highest sand ridge in this vicinity.

Station mark: A 2 by 4 inch scantling, 18 feet long, set in ground 3 feet, braced with guy wires, and having cross vanes of black cloth, 3 by 5 feet, at top.

Signal: Same.

[Latitude 31° 53′ 18.11″. Longitude 106° 53′ 09.70″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Crater	159 12 24	339 09 40	4.18300	9.470
Sand	201 11 28	21 12 19	3.84892	4.388
Herrington	303 18 33	123 20 09	3.75864	3.564

HUNT WINDMILL, DONA ANA COUNTY, N. MEX. (Not occupied.)

Sighted from two stations only. A windmill at Hunt's ranch, about 5 miles north of Noria.

Station mark: Well.

Signal: Windmill over well.

[Latitude 31° 55′ 32.97″. Longitude 106° 54′ 37.32″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Riley	90 03 57	269 59 07	4.15902	8.961
Crater	162 51 42	342 50 39	4.02369	6.562

HYLO, GRANT COUNTY, N. MEX.

On a high rocky peak 2 miles east of Culberson's ranch and about 2 miles north of United States and Mexico border.

Station mark: Bronze tablet set in solid rock.

Signal: A cairn 7 feet high, having a 6-foot base, 9.5 feet southeast of tablet. True azimuth from mark to signal, 331° 57′.

[Latitude 31° 23′ 34.26″. Longitude 108° 35′ 49.90″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lang	70 02 00.32	249 57 00.42	4.2096112	10.068
Lone Tree	114 47 55	294 42 29	4.26001	11.307
O. K.	168 58 48.69	348 57 47.43	4.2094189	10.064
Big Hatchet	215 01 21.13	35 07 35.11	4.5165727	20.414
Sycamore	268 18 33.87	88 27 08.34	4.4166613	16.218
Border	297 44 38	117 48 14	4.09392	7.714

JIM, DONA ANA COUNTY, N. MEX.

Three miles north of Potrillo station on the El Paso & Southwestern R. R., on top of a sharp-pointed, cone-shaped peak, the last prominent point but one on the East Potrillo Mountains, 1 mile north of the extreme southern point of the range. An old wagon road runs north and south on the west side of the peak about one-fourth of a mile from the foot. An old east and west road also runs up to the foot of the range a little north of the peak.

Station mark: Cross cut in rock 2 feet by 2 feet, on the highest point on the peak.

Signal: Tripod of juniper branches over mark.

[Latitude 31° 50′ 23.28″. Longitude 106° 59′ 41.11″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rat	80 14 35.78	260 08 22.09	4.2767470	11.752
Potrillo	111 09 17.34	291 02 00.61	4.3672929	14.476
Cox	134 51 03	314 48 15	4.06898	7.283
Riley	145 59 33.04	325 57 23.53	4.0613496	7.156
Crater	193 54 15.62	13 55 53.55	4.3058676	12.567
Sand	226 58 23.61	47 02 41.77	4.2443810	10.908
Herrington	261 32 14.40	81 37 17.18	4.1832661	9.476
Noria	287 01 58	107 06 12	4.12221	8.233
Restless	320 21 37	140 21 53	3.09012	0.765

LANARK, DONA ANA COUNTY, N. MEX. (Not occupied.)

Center of water tank at Lanark railroad station.

Station mark: Center of tank.

Signal: Same.

[Latitude 31° 58′ 12.37″. Longitude 106° 49′ 03.65″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Sand	57 38 07	237 36 48	3.66540	2.873
Crater	113 36 32	293 32 16	4.11244	8.050
Mada	294 21 11	114 23 26	3.86798	4.580

LANG, GRANT COUNTY, N. MEX.

On the highest peak of the San Luis Mountains, between San Luis Pass and Mexican boundary. Is 4 miles south of the road, 1 mile north of international boundary monument No. 65, and 4 miles northeast of Lang ranch in the Animas Valley. Top of peak was cleared of scattered trees except one juniper tree.

Station mark: Bronze tablet in cone-shaped rock projecting 1 foot above ground, 10 feet northeast of signal.

Signal: Juniper tree. True azimuth from mark to signal, 27° 47′.

[Latitude 31° 20′ 34.24″. Longitude 108° 45′ 26.04″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Monument No. 67	83 24 46	263 21 13	4.00765	6.324
Corner	89 16 18.48	269 09 05.21	4.3428206	13.683
Rocky	125 58 55.18	305 53 21.70	4.3198431	12.978
Animas	174 36 03.18	354 35 13.92	4.4221204	16.424
O. K.	209 26 03.32	29 30 02.61	4.3914180	15.303
Hylo	249 57 00.42	70 02 00.32	4.2096112	10.068
Border	270 27 16	90 35 52	4.41860	16.291

LAVA, LUNA COUNTY, N. MEX. (Not occupied.)

On low hill about 4 miles east of Hermanas railroad station.
Station mark: Cairn.
Signal: Same.

[Latitude 31° 50′ 45.19″. Longitude 107° 50′ 31.99″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hermanas	64 43 10	244 39 01	4.04407	6.877
Wart	110 08 48	290 04 25	4.14348	8.646
Chloride	233 51 23	53 54 48	4.10240	7.866

LITTLE HATCHET, GRANT COUNTY, N. MEX.

On the highest one of a group of peaks about 10 miles southwest of Hachita and 2 miles south of road leading through a pass from Hachita to Playas Valley.
Station mark: Bronze tablet under cairn.
Signal: Cairn having a 4½-foot base and 6 feet high.

[Latitude 31° 50′ 30.04″. Longitude 108° 27′ 10.86″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
O.	26 22 38.79	206 17 04.46	4.5773508	23.480
North Animas	56 21 02.72	236 13 51.04	4.4137585	16.110
Cliff	99 57 18	279 48 31	4.38193	14.972
Bum		280 55 37	3.75766	3.556
Playas	125 31 09.34	305 24 21.73	4.3958269	15.459
Vista	178 29 49.88	358 29 41.80	4.1848965	9.511
Hachita Tank	235 53 06	55 57 19	4.18161	9.440
Cedar	240 51 05.28	60 59 41.05	4.4674460	18.230
Rica	269 41 35.90	89 46 52.92	4.1986729	9.818
Apache	295 31 23.91	115 36 53.69	4.2611557	11.337
Big Hatchet	347 15 01.31	167 16 44.63	4.3702262	14.574

LONE TREE, GRANT COUNTY, N. MEX. (Not occupied.)

Sighted from two stations only. A lone tree on south slope of a bald knob in the Animas Mountains, 3 miles north of road leading through San Luis Pass, and 7 or 8 miles northwest of Culberson's ranch.
Station mark: Lone tree.
Signal: Same.

[Latitude 31° 27′ 41.66″. Longitude 108° 46′ 15.61″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
O. K.	238 17 13	58 21 38	4.19766	9.795
Hylo	294 42 29	114 47 55	4.26001	11.307

MADA, DONA ANA COUNTY, N. MEX.

Station is 1½ miles east and 1 mile north of Vevay switch on Southern Pacific R. R., one-fourth of a mile southeast of the Hall & Primm ranch and windmill, on top of ridge on east side of draw. To reach station by road from Vevay, take road east across railroad to adobe house and windmill, thence north to the Hall & Primm ranch (visible from this point).
Station mark: Iron bench-mark post set in ground.

Signal: Lumber with cross vanes of black cloth, 3 by 5 feet, at top; the whole being 17 feet high and set 3 feet in ground. Signal is braced with two sets of four guy wires. Azimuth from mark to signal, 328° 55′; distance 5 feet.

[Latitude 31° 56′ 33.51″. Longitude 106° 44′ 47.71″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mill	24 29 57	204 29 07	3.77873	3.730
Sand	93 04 50.00	273 01 15.83	4.0272048	6.615
Lanark	114 23 26	294 21 11	3.86798	4.580
Canutillo	288 00 55.55	108 02 55.75	3.7977941	3.901
Crossing	359 01 29.30	179 01 31.72	3.8556734	4.457

McLAURIN, LUNA COUNTY, N. MEX. (Not occupied.)

Sighted from two stations only. On low hill 4 miles southeast of White House ranch.

Station mark: Cairn.

Signal: Cairn.

[Latitude 31° 54′ 10.47″. Longitude 107° 47′ 43.88″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Scuth Base	166 24 04	346 22 44	4.22519	10.436
Chloride	258 53 14	78 55 11	3.77210	3.677

MASTODON, DONA ANA COUNTY, N. MEX.

Three miles southeast of Mastodon railroad station, one-fourth of a mile north of United States and Mexico boundary line, 1,650 feet northwest of boundary monument No. 4, on sand bank 10 feet high, slightly higher than other sand banks in vicinity, about 600 feet south of another sand bank distinguished by being covered with green brush. Signal can be seen from Wilson's windmill tower at Mastodon.

Station mark: Bronze tablet set in top of cement post 8 inches in diameter and 3 feet long under center of signal.

Signal: Quadripod of lumber 12 feet high, set in ground 3 feet and covered with white cloth.

[Latitude 31° 47′ 17.58″. Longitude 106° 39′ 49.46″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Midway	101 16 39.69	281 12 32.54	4.0996602	7.816
Crossing	142 12 57.40	322 10 22.53	4.1002078	7.826
Canutillo	172 59 41.95	352 59 04.48	4.1845234	9.503
North Franklin	231 41 39.59	51 47 03.14	4.3124625	12.759
Monument No. 2	272 18 25.66	92 22 26.04	4.0797654	7.466

MESQUITE, LUNA COUNTY, N. MEX. (Not occupied.)

Sighted from two stations only. On windmill tower at Mesquite ranch.

Station mark: Windmill tower.

Signal: Same.

[Latitude 31° 59′ 17.53″. Longitude 107° 27′ 54.17″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Yoakum	260 24 05	80 27 28	4.00768	6.324
Glorious	341 19 14	161 21 44	4.36899	14.532

MIDWAY, DONA ANA COUNTY, N. MEX.

Six miles west of Mastodon and 4½ miles east of Noria, stations on the El Paso & Southwestern R. R., on south side of wagon road and railroad, 700 feet southeast of milepost 21 on above railroad, 1½ miles southwest of Herrington's lower ranch and windmill (Thompson, present tenant), near east side of a flat sand ridge running northwest and southeast, on top of a sand bump which is about 4 feet higher than the general elevation of the immediate vicinity. Azimuth from mark to signal, 170° 05′, distance 5.35 feet.

Station mark: Iron bench-mark post set in ground and projecting 4 inches above the surface.

Signal: Lumber with cross vanes of black cloth 3 by 4 feet at top, the whole being 16 feet high and set 3 feet in ground; it is braced with four guy wires.

[Latitude 31° 48′ 37.21″. Longitude 106° 47′ 38.49″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Noria		202 00 59	3.82391	4.142
Herrington	144 34 30.53	324 33 12.04	3.8293445	4.195
Crossing	211 34 52.87	31 36 25.42	3.9446633	5.470
Wilson	261 39 38	81 42 52	3.99036	6.077
Mastodon	281 12 32.54	101 16 39.69	4.0996602	7.816

MILL, DONA ANA COUNTY, N. MEX. (Not occupied.)

Center of windmill tower, 2 miles southwest of Vevay switch on Southern Pacific R. R. between Strauss and Lanark. Only windmill in vicinity on west side of railroad.

Station mark: Center of windmill.

[Latitude 31° 53′ 36.02″. Longitude 106° 46′ 22.52″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mada	204 29 07	24 29 57	3.77873	3.730
Canutillo	247 22 55		3.96200	5.689
Crossing	303 05 44	123 06 37	3.49418	1.939

LONE MILL, LUNA COUNTY, N. MEX. (Not occupied.)

A tall windmill about 3 miles north of Columbus and half a mile east of road leading from Columbus to Deming. There is a masonry reservoir near this mill, but no house.

Station mark; well.

Signal: Windmill over well.

[Latitude 31° 52′ 21.32″. Longitude 107° 38′ 42.66″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chloride	118 09 39	298 06 50	3.97971	5.929
Waterloo	179 00 03	358 59 58	4.13560	8.491
Stiles	338 30 20	158 31 06	3.91635	5.125

NEAR, LUNA COUNTY, N. MEX.

A station of the U. S. Coast and Geodetic Survey. Five miles in a direct line S. 33° W. from Victorio, a station on the El Paso & Southwestern R. R., on a high rocky peak, the more eastern one of two peaks in that vicinity, and about 1 mile west-northwest of the Sierra Rica mines. The reference mark, a cross cut in the rock, is 4.11 meters from the station in azimuth 116° 30′.

Station mark: Disk cemented into solid rock.

[Latitude 31° 47′ 23.753″. Longitude 108° 11′ 03.884″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Big Hatchet	49 52 01.23	229 45 16.16	4.4242331	16.504
Apache	76 38 20.48	256 35 20.73	3.9652408	5.736
Rica	121 08 04.75	301 04 51.75	4.0509915	6.988
Brush	165 44 38	345 42 32	4.36260	14.321
Cedar	180 39 57.48	0 40 02.15	4.3009734	12.426
W	210 06 15.67	30 09 16.13	4.2283026	10.511
Prospect	224 41 16	44 45 19	4.23602	10.700
Florida (C. & G. S.)	235 19 06.8	55 36 49.4	4.806230	.....
Hermanas (C. & G. S.)	266 10 31.9	86 18 00.5	4.351190	.....

NORIA, DONA ANA COUNTY, N. MEX. (Not occupied.)

Center of farthest west and newest one of three well derricks at Noria, a station on the El Paso & Southwestern R. R., about 25 miles west of El Paso, Tex. The derrick is on south side of track, about 300 feet west of water tower, and is 70 feet high.

Station mark: Center of well derrick.

[Latitude 31° 48′ 16.99″. Longitude 106° 51′ 39.46″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Jim	107 06 12	287 01 58	4.12221	8.233
Herrington	202 00 59	.....	3.82391	4.142
Midway	263 43 38	.....	3.81171	4.028

NORTH ANIMAS, GRANT COUNTY, N. MEX.

On a high bald peak of the Animas Mountains, in T. 30 S., R. 18 W., half a mile southeast of quarter corner between secs. 8 and 9. On a sharp ridge of range north of Animas Peak, 1 mile east of spring and small cabin on the Bakers' holdings known as their West ranch. Three miles south of road from Animas Valley through the pass to the Playas Valley and Hachita.

Station mark: Bronze tablet in solid rock.

Signal: Bamboo cone covered with white cloth over station mark.

[Latitude 31° 42′ 42.86″. Longitude 108° 40′ 50.56″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Animas	33 44 07.60	213 40 53.57	4.2444633	10.910
Mill	56 11 36	236 05 46	4.32500	13.133
Baldy	83 22 08.07	263 14 19.00	4.3741838	14.707
X T Ranch	108 26 33	288 22 34	4.10135	7.847
Gray	128 22 44.89	308 15 06.66	4.4648110	18.120
Twin	112 13 36	292 04 07	4.48696	19.068
Antelope	136 22 03	316 13 29	4.57390	23.295
Animas Mill	154 24 41	334 20 43	4.43901	17.075
Cliff	173 15 07	353 14 23	4.27070	11.584
Playas	182 31 47.19	2 32 12.80	4.4601648	17.927
Vista	215 24 17.00	35 31 21.47	4.5617433	22.651
Bum	225 48 36	45 53 55	4.34670	13.806
Little Hatchet	236 13 51.04	56 21 02.72	4.4137585	16.110
Road	271 51 58	91 57 10	4.19471	9.729
Big Hatchet	287 31 16.72	107 40 10.26	4.4483934	17.448
O. K	346 03 27.15	166 05 03.26	4.3025068	12.470

O. K., GRANT COUNTY, N. MEX.

On high oval-shaped peak on east spur of the Animas Range on the west side of the Playas Valley north of Walnut Creek. Two miles west of Seven K's ranch house occupied by Mr. Tullous. This peak has a rock cliff 200 feet high on west side near summit.

Station mark: Bronze tablet in large flat rock near center of top, 6 feet east of signal.

Signal: Cairn 8 feet high. Azimuth from mark to signal, 88° 44′.

[Latitude 31° 32′ 10.44″. Longitude 108° 37′ 47.26″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lang	29 30 02.61	209 26 03.32	4.3914180	15.303
Lone Tree	58 21 38	238 17 13	4.19766	9.795
Animas	108 30 37.57	288 25 48.10	4.1869407	9.556
North Animas	166 05 03.26	346 03 27.15	4.3025068	12.470
Little Hatchet	206 17 04.46	26 22 38.79	4.5773508	23.480
Road	209 42 51	29 46 26	4.33912	13.567
Big Hatchet	243 21 09.31	63 28 25.52	4.3901385	15.258
Walnut Wells	264 20 41	84 24 21	4.04643	6.915
Pierce	287 56 07	108 04 51	4.44493	17.309
Sycamore	297 22 53.93	117 32 30.72	4.5168441	20.427
Hylo	348 57 47.43	168 58 48.69	4.2094190	10.064

PARK'S MILL, LUNA COUNTY, N. MEX. (Not occupied.)

A windmill about 10 miles northeast of Columbus, 150 feet west of G. E. Park's adobe house, and 200 feet north of east and west road.

Station mark: Well.

Signal: Windmill over well.

[Latitude 31° 55′ 25.10″. Longitude 108° 34′ 11.79″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chloride	85 46 18	265 41 05	4.19237	9.677
Waterloo	137 26 47	317 24 19	4.03608	6.752

P. B. M., LUNA COUNTY, N. MEX. (Not occupied.)

Sighted from two stations only. Near permanent bench mark near junction of road running east from school and diagonal road northeast.

Station mark: Flag on yucca.

Signal: Same.

[Latitude 31° 54′ 37.04″. Longitude 107° 29′ 38.26″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Yoakum	231 00 00	51 04 17	4.21563	10.208
Glorious	322 52 37	142 56 02	4.22914	10.531

NORTH FRANKLIN, EL PASO COUNTY, TEX.

A station of the U. S. Coast and Geodetic Survey near the U. S. Geological Survey station of the same name. It is 10 miles direct or 16 miles by road and trail north of El Paso and on the highest peak of the Franklin Mountains, which is smooth and rather pointed in appearance and has a red color. The station is marked with a U. S. Geological Survey bench-mark disk, stamped with the elevation, 7,141 feet, and cemented

into a drill hole in the solid rock. The reference mark is the highest point of the upper one of two outcropping rocks on the north side of the ridge, 0.48 meter from the south point and 0.47 meter from the west point of the rock. The top of this rock is about 3 feet above the top of the lower rock, which has a precipitous face about 4 feet high on the north side. The reference mark is 14.61 meters from the station in azimuth 303° 38′. The U. S. Geological Survey station North Franklin, marked by a cairn, is 2.9 meters from this station in azimuth 174° 05′.

[Latitude 31° 54′ 10.436″ C. & G. S.; 31° 54′ 10.406″ G. S. Longitude 106° 29′ 36.241″ C. & G. S.; 106° 29′ 36.251″ G. S.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Monument No. 2 (G. S.)	17 21 23.64	197 20 00.88	4.1409799	8.597
Monument No. 2 (C. & G. S.)	17 21 19.6	197 19 56.8	4.141011	8.597
Mastodon	51 47 03.14	231 41 39.59	4.3124625	12.759
Strauss	77 51 29	257 45 16	4.30092	12.405
Borderland	78 49 06	258 45 50	3.99647	6.154
Canutillo	97 51 24.54	277 45 22.83	4.2587468	11.274
Corduna (C. & G. S.)	261 22 44.70	81 53 47.77	4.9703636	.....
Black (C. & G. S.)	285 39 50 29	106 22 18.42	5.1227252	.....
Quitman (C. & G. S.)	311 08 58.10	131 40 14.90	5.1012531	.....

G. S.=Geological Survey. C. & G. S.=Coast & Geodetic Survey.

PIERCE, GRANT COUNTY, N. MEX. (Not occupied.)

On a high rocky peak in northeast part of the Alamo Hueco Mountains, 1 mile northwest of Pierce's ranch house, 2 miles south of road between Playas Valley and Hachita Valley through the pass between Big Hatchet and Alamo Hueco mountains.

Station mark: Cairn 7 feet high.

Signal: Same.

[Latitude 31° 27′ 30.81″. Longitude 108° 22′ 03.42″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
O. K	108 04 51	287 56 07	4.44493	17.309
Big Hatchet	167 03 16	347 01 47	4.30350	12.498
Sycamore	337 48 46	157 49 02	3.84978	4.397

PLAYAS, GRANT COUNTY, N. MEX.

On low rocky hill three-fourths of a mile north of El Paso & Southwestern R. R. and 3½ miles nearly west of Playas railroad station.

Station mark: Bronze tablet in solid rock.

Signal: Bamboo cone covered with white cloth over center.

[Latitude 31° 58′ 18.67″. Longitude 108° 40′ 02.06″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
North Animas	2 32 12.80	182 31 47.19	4.4601648	17.927
Cliff	18 36 47	.....	4.03612	6.753
Gray	66 03 40.88	245 55 35.33	4.4217121	16.408
Animas Mill	72 56 39	252 52 18	4.13829	8.544
Antelope	86 26 41	266 17 34	4.43447	16.898
Vista	267 26 24.41	87 33 04.71	4.2981079	12.344
Little Hatchet	305 24 21.73	125 31 09.34	4.3958269	15.459
Bum	312 18 19	132 23 14	4.29703	12.313

POTRILLO, DONA ANA COUNTY, N. MEX.

On high mountain 10 miles northeast of P O L ranch, owned by Mr. Birchfield.
Station mark: Aluminum tablet.
Signal: Rock cairn. Azimuth from mark to signal, 85° 43′; distance, 7.6 feet.

[Latitude 31° 54′ 55.50″. Longitude 107° 13′ 28.08″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Glorious	47 22 39.88	227 17 33.07	4.3177819	12.916
Yoakum	127 34 45.74	307 30 29.68	4.2047073	9.955
Sag	207 22 02.70	27 23 49.62	4.0619016	7.166
Riley	265 36 49.00	85 41 56.60	4.1854698	9.524
Jim	291 02 00.61	111 09 17.34	4.3672929	14.476
Rat	344 59 17.98	165 00 20.44	4.0797594	7.466

PROSPECT, LUNA COUNTY, N. MEX. (Not occupied.)

A secondary station on sharp bald peak 2½ miles southwest from Gibson's ranch and 5 miles northwest from Hermanas station of El Paso & Southwestern R. R.
Station mark: Highest point of peak.
Signal: Pole cone covered with white cloth.

[Latitude 31° 54′ 01.00″. Longitude 108° 03′ 23.00″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Near	44 45 19	224 41 16	4.23602	10.700
W	123 29 36	303 27 51	3.63753	2.697
Hermanas	316 18 31	136 21 57	4.17251	9.244

RAT, DONA ANA COUNTY, N. MEX.

On hill 1½ miles north of Monument, a station on El Paso & Southwestern R. R.
Station mark: Bronze tablet.
Signal: Cairn. Azimuth from mark to signal, 55° 45′; distance, 10.5 feet.

[Latitude 31° 48′ 38.67″. Longitude 107° 11′ 29.75″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Glorious	82 22 30.19	262 16 21.48	4.2688755	11.541
Potrillo	165 00 20.44	344 59 17.98	4.0797594	7.466
Riley	223 37 14	43 41 18	4.24666	10.966
Jim	260 08 22.09	80 14 35.78	4.2767470	11.752
Restless	263 16 04	83 22 33	4.29126	14.151
Tank	266 42 12	86 45 40	4.01784	6.474
Monument No. 10	285 38 49	105 42 23	4.04582	6.905

RESTLESS, DONA ANA COUNTY, N. MEX.

Sighted from two stations only. On southernmost hill on ridge extending southeast from Mount Riley.
Station mark: Rock cairn.
Signal: Same.

[Latitude 31° 49′ 52.48″. Longitude 106° 59′ 11.23″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rat	83 22 33	263 16 04	4.29126	14.151
Riley	140 21 53	320 21 37	3.09012	0.765

RICA, GRANT COUNTY, N. MEX.

On a high bald peak about 7 miles southeast of Hachita and 1 mile east of the Apache mine.

Station mark: Bronze tablet in ledge under cairn.

Reference marks: Three arrows cut in solid rock and pointing to center.

Signal: Cairn of 6½-foot base, 6½ feet high.

[Latitude 31° 50′ 32.40″. Longitude 108° 17′ 09.94″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Big Hatchet	24 55 05.85	204 51 33.06	4.4031134	15.720
Little Hatchet	89 46 52.92	269 41 35.90	4.1986729	9.818
Vista	133 17 36.86	313 12 11.12	4.3468926	13.812
Hachita Tank	159 10 48	339 09 44	3.95571	5.612
Brush	193 24 07	13 25 26	4.23010	10.555
Cedar	214 45 06.66	34 48 24.83	4.2373251	10.732
W	243 58 50.20	64 04 54.14	4.3041478	12.517
Near	301 04 51.75	121 08 04.75	4.0509915	6.988
Apache	355 18 26.04	175 18 39.11	3.9016708	4.955

RILEY, DONA ANA COUNTY, N. MEX.

Five miles southwest of Phillips ranch house and wells, on farthest east one of a group of high mountains known as the Mount Riley group, which is about 1 mile northwest of the north end of a lower range of mountains (East Potrillo Mountains).

Station mark: Bronze tablet cemented in rock flush with ground.

Signal: Quadripod of juniper branches wired together and placed over station mark.

[Latitude 31° 55′ 33.19″. Longitude 107° 03′ 46.32″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Monument No. 10	5 24 15	185 23 45	4.19978	9.843
Tank	8 20 53	188 20 17	4.09005	7.645
Rat	43 41 18	223 37 14	4.24666	10.966
Cox	55 30 54	235 30 17	3.35514	1.480
Potrillo	85 41 56.60	265 36 49	4.1854698	9.524
Sag	132 20 36.06	312 17 14.99	4.1298851	8.380
South Blue	192 27 13	12 27 56	3.99629	6.161
Crater	228 13 20.13	48 17 08.02	4.1803068	9.411
Hunt Windmill	269 59 07	90 03 57	4.15902	8.961
Jim	325 57 23.53	145 59 33.04	4.0613496	7.156

ROAD, GRANT COUNTY, N. MEX. (Not occupied.)

Windmill in rear of small adobe house near middle of Playas Valley, on north side of main east and west road.

Station mark: Well.

Signal: Wirdmill.

[Latitude 31° 42′ 25.94″. Longitude 108° 30′ 56.27″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
O. K	29 46 26	209 42 51	4.33912	13.567
Animas	61 03 50	240 55 12	4.46310	18.048
North Animas	91 57 10	271 51 58	4.19471	9.729

ROCKY, GRANT COUNTY, N. MEX.

On the higher of two pointed peaks, known as Black Point. On the west side of Animas Valley, 2 miles north of Cloverdale post office and north of Cloverdale Creek.

Station mark: Bronze tablet in solid rock, 10 feet north of signal; true azimuth from mark to signal, 348° 23′.

Signal: Live-oak tree.

[Latitude 31° 27′ 12.23″. Longitude 108° 56′ 06.13″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Corner	22 05 31.06	202 03 50.60	4.1320684	8.422
Cloverdale	75 43 29	255 40 04	4.02921	6.646
Baldy	181 20 00.53	1 20 12.52	4.4134567	16.099
Howe's Mill	201 16 05	21 17 56	4.25823	11.261
Animas	225 39 08.90	45 43 54.20	4.3037073	12.504
Lang	305 53 21.70	125 58 55.18	4.3198431	12.978

SAG, DONA ANA COUNTY, N. MEX.

On summit of ridge of the West Potrillo Mountains.

Station mark: Bronze tablet. Azimuth from mark to signal, 59° 09′; distance 5.8 feet.

Signal: Cairn.

[Latitude 32° 00′ 27.96″. Longitude 107° 10′ 06.10″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Potrillo	27 23 49.62	207 22 02.70	4.0619016	7.166
Yoakum	88 31 59.06	268 25 55.62	4.2553837	11.188
South Blue	267 07 01	87 11 05	4.08352	7.531
Crater	267 13 54.60	87 21 04.08	4.1281106	8.346
Riley	312 17 14.99	132 20 36.06	4.1298851	8.380

SAND, DONA ANA COUNTY, N. MEX.

Three miles west and 1 mile south of Lanark, a station on the Southern Pacific R. R., 3 miles northeast of Hunt's "East" well, 1 mile south of the main road running west from Lanark. An old trail, which leaves the main road about half a mile west of Lanark (barely visible), crosses the ridge on which the station is situated about 600 feet north of station. The station is one-fourth of a mile south of the north end of a very sandy ridge, about 600 feet south of a draw cutting into the ridge from the west. The sand ridge on which the station is located is very noticeable from a point on the main road west, in a slight draw running north and south across this road, about 3 miles west of Lanark.

Station mark: Standard iron post set on a slight rise of sand, with about 4 inches of the post projecting above ground.

Signal: Lumber tripod 20 feet high.

[Latitude 31° 56′ 51.91″. Longitude 106° 51′ 32.50″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hunt	21 12 19	201 11 28	3.84892	4.382
Jim	47 02 41.77	226 58 23.61	4.2443810	10.908
Crater	133 54 03.44	313 51 22.72	4.0434330	6.867
Lanark	237 36 48	57 38 07	3.66540	2.873
Mada	273 01 15.83	93 04 50	4.0272048	6.615
Crossing	305 41 57.45	125 45 33.88	4.1222548	8.234
Herrington	347 02 59.68	167 03 44.68	3.9995908	6.208

SHERIDAN, GRANT COUNTY, N. MEX.

On south side of Big Hatchet Mountains, about 1 mile north of south end of spur and on east side of Sheridan Canyon, one-fourth of a mile from trail in canyon from Mengus Tank.

Station mark: Cross cut in solid rock 5 feet northwest of signal; true azimuth from mark to signal, 308° 52′.

Signal: Built of juniper brush.

[Latitude 31° 34′ 09.40″. Longitude 108° 18′ 15.94″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Sycamore	5 17 28	185 16 52	4.00717	6.317
Hylo	54 56 13	234 48 21	4.53151	21.128
Big Hatchet	129 24 43	309 21 46	4.06240	7.174
Cabin	238 31 19	58 34 11	4.00658	6.309

SKEWED, LUNA COUNTY, N. MEX. (Not occupied.)

On low hill about 3 miles north of White House ranch.

Station mark: Cairn.

Signal: Same.

[Latitude 31° 59′ 33.55″. Longitude 107° 49′ 31.33″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Wart	47 46 50	227 45 21	3.77766	3.724
Deming South Base	169 56 51	349 56 23	3.81104	4.022
Chloride	315 35 27	135 38 21	4.09100	7.662

SOUTH BLUE, DONA ANA COUNTY, N. MEX. (Not occupied.)

South end of blue house 6 miles northeast of Mount Riley Peak. Sighted from two stations only.

Station mark: South end of blue house.

Signal: Same.

[Latitude 32° 00′ 47.50″. Longitude 107° 02′ 24.85″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ″ ″	*Log. meters.*	*Miles.*
Riley	12 27 56	192 27 13	3.99629	6.161
Sag	87 11 05	267 07 01	4.08352	7.531

STILES, LUNA COUNTY, N. MEX.

On a small hill 3 miles southeast of Columbus.

Station mark: Bronze tablet. Azimuth from station mark to signal, 55° 12′; distance, 5.7 feet.

Signal and reference mark: Cairn.

[Latitude 31° 48′ 12.19″. Longitude 107° 36′ 47.78″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Division	83 12 11.69	263 08 21.57	4.0633681	7.190
Chloride	136 48 56.10	316 45 06.44	4.2228349	10.380
Lone Mill	158 31 06	338 30 20	3.91635	5.125
Waterloo	171 19 45.94	351 18 40.44	4.3341102	13.411
Yoakum	227 15 49.38	47 23 53.45	4.5149834	20.339
Glorious	274 21 47.67	94 28 58.83	4.3342866	13.416

SYCAMORE, GRANT COUNTY, N. MEX.

On the more westerly apex of a double peak near south end of the Alamo Hueco Mountains; it is 1½ miles northwest of Sycamore Springs and can best be reached from this place. Peak on which station is located will be noted as having a sharp, narrow summit and rocky bluffs near top.

Station mark: Bronze tablet in solid rock on highest point, 7 feet northwest of signal; true azimuth from mark to signal, 329° 50′.

Signal: Cairn 7 feet high.

[Latitude 31° 23′ 58.21″. Longitude 108° 19′ 22.33″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Border	66 39 56	246 35 38	4.21619	10.222
Hylo	88 27 08.34	268 18 33.87	4.4166613	16.218
O. K.	117 32 30.72	297 22 53.93	4.5168441	20.427
Pierce	157 49 02	337 48 46	3.84978	4.397
Big Hatchet	164 40 02.74	344 37 40.50	4.4332433	16.850
Sheridan	185 16 52	5 17 28	4.00772	6.317
Cabin	203 20 10.00	23 23 36.38	4.4195581	16.327
Big Hat	271 43 05	91 44 29	3.81388	4.048

STRAUSS, DONA ANA COUNTY, N. MEX. (Not occupied.)

Center of galvanized-iron water tank at Strauss, a station on the Southern Pacific R. R.

Station mark: Center of tank.

Signal: Same.

[Latitude 31° 51′ 53.07″. Longitude 106° 41′ 59.89″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Crossing	108 53 08	288 51 42	3.65636	2.812
Canutillo	193 07 37	13 08 08	3.83723	4.265
North Franklin	257 45 16	77 51 29	4.30092	12.405

TANK, DONA ANA COUNTY, N. MEX. (Not occupied.)

Sighted from two stations only. A large black water tank at Mount Riley station on El Paso & Southwestern R. R.

Station mark: Center of tank.

Signal: Same.

[Latitude 31° 48′ 57.93″. Longitude 107° 04′ 54.22″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rat	86 45 40	266 42 12	4.01784	6.474
Riley	188 20 17	8 20 53	4.09005	7.645

TRUCK, LUNA COUNTY, N. MEX.

On sand dune about 3 miles south of P O L ranch, owned by Birchfield.

Station mark: White signal.

Signal: Same.

[Latitude 31° 50′ 49.76″. Longitude 107° 23′ 15.21.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Stiles	77 15 49	257 08 41	4.34071	13.616
Yoakum	188 53 57	8 54 52	4.24411	10.901
Glorious	358 39 54	178 39 52	3.81430	4.052

TWIN, GRANT COUNTY, N. MEX. (Not occupied.)

Sighted from two points only. The higher one of twin peaks about 5 miles southeast of Rodeo station on the El Paso & Southwestern R. R. and 5 miles northwest of the X T ranch.

Station mark: Cairn.

Signal: Same.

[Latitude 31° 48′ 58.48″. Longitude 108° 58′ 50.66″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gray	220 20 04	40 21 55	3.93161	5.308
North Animas	292 04 07	112 13 36	4.48696	19.068

VISTA, GRANT COUNTY, N. MEX.

On low rocky peak about 2 miles northwest from Vista station on the El Paso & Southwestern R. R. and three-fourths of a mile north of railroad.

Station mark: Cross cut in solid rock on highest point of peak.

Reference marks: (1) Arrow cut in solid rock 6 feet northeast of and pointing to center; (2) arrow cut in solid rock 4½ feet northwest of and pointing to center.

Signal: Bamboo cone covered with white cloth.

[Latitude 31° 58′ 46.85″. Longitude 108° 27′ 26.15″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
North Animas	35 31 21.47	215 24 17.00	4.5617433	22.651
Playas	87 33 04.71	267 26 24.41	4.2981079	12.344
Cedar	272 13 25.03	92 22 09.90	4.4157178	16.183
Hachita Tank	297 33 53	117 37 56	4.16579	9.102
Rica	313 12 11.12	133 17 36.86	4.3468926	13.812
Little Hatchet	358 29 41.80	178 29 49.88	4.1848965	9.511

W, LUNA COUNTY, N. MEX.

On bald peak, which is the highest point in the Cedar Mountain Range. Station is on the southeastern summit of a double peak and about 8 miles northwest from Hermanas, a station on the El Paso & Southwestern R. R. and 1½ miles northwest from Gibson's ranch.

Station mark: Cross cut in solid rock.

Reference marks: (1) Cross cut in solid rock 29.5 feet south from center; (2) cross cut in solid rock 22.1 feet southwest from center; (3) cross cut in solid rock 8.9 feet east from center.

Signal: Cone built of juniper brush.

[Latitude 31° 55′ 18.78″. Longitude 108° 05′ 40.87″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ″ ″	*Log. meters.*	*Miles.*
Near	30 09 06.13	210 06 15.67	4.2283026	10.511
Rica	64 04 54.14	243 58 50.20	4.3041478	12.517
Brush	118 35 19	298 30 34	4.20728	10.015
Cedar	123 03 34.50	303 00 48.30	3.9930447	6.115
Cone	241 06 43.02	61 08 56.78	3.8799030	4.713
Prospect	303 27 51	123 29 36	3.63753	2.697
Hermanas	313 24 08.55	133 28 47.56	4.2818464	11.890

WALNUT WELL, GRANT COUNTY, N. MEX. (Not occupied.)

Sighted from two points only. Station is windmill at Burketts ranch, about 2 miles north of Walnut Wells post office in the Playas Valley, 3 miles north of Walnut Wells, and 1 mile south of adobe schoolhouse.

Station mark: Well.

Signal: Windmill over well.

[Latitude 31° 32′ 45.85″. Longitude 108° 30′ 47.43″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
O. K.	84 24 21	264 20 41	4.04643	6.915
Big Hatchet	227 41 45	47 45 21	4.16779	9.144

WART, LUNA COUNTY, N. MEX.

Stone monument, with pole in center, on top of a small hill half a mile southeast of Tomerlin railroad station.

Station mark: Cairn.

Signal: Same.

[Latitude 31° 57′ 22.77″. Longitude 107° 52′ 20.34″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hermanas	22 51 08	202 48 49	4.26531	11.446
Yellow	143 18 30	323 17 21	3.75903	3.568
Deming South Base	197 37 17	17 38 24	4.03796	6.781
Skewed	227 45 21	47 46 50	3.77766	3.724
Chloride	290 04 25	110 08 48	4.14348	8.646
Lava	346 54 12	166 55 09	4.09941	7.812

WATERLOO, LUNA COUNTY, N. MEX.

On a round hill 150 feet high, 2 miles northeast of Waterloo store.

Station mark: Bronze tablet in solid rock. Azimuth from mark to signal, 69° 27′; distance, 7.16 feet.

Signal and reference mark: Cairn.

Latitude 31°59′ 44.90″. Longitude 107° 38′ 51.74″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ″ ″	*Log. meters.*	*Miles.*
Chloride	41 45 09.37	221 42 24.69	4.0890761	7.628
Deming South Base	108 37 58.38	288 31 56.39	4.2764627	11.744
Yoakum	268 08 28.19	88 17 39.25	4.4363136	16.969
Glorious	312 49 07.43	132 57 25.25	4.5288744	21.000
Parks Mill	317 24 19	137 26 47	4.03608	6.752
Stiles	351 18 40.44	171 19 45.94	4.3311102	13.411
Lone Mill	358 59 58	179 00 03	4.13560	8.491

WILSON, DONA ANA COUNTY, N. MEX. (Not occupied.)

Center of A. Wilson's windmill at Mastodon, a station on El Paso & Southwestern R. R.

Station mark: Well.

Signal: Windmill over well.

[Latitude 31° 49′ 23.12′. Longitude 106° 41′ 30.52″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Midway	81 42 52	261 39 38	3.99036	6.077
Crossing	140 15 17	320 13 35	3.89846	4.913

X T, GRANT COUNTY, N. MEX. (Not occupied.)

Windmill tower without wheel near small house, one-quarter of a mile east of the X T ranch, and 13 miles south of Animas railroad station.
Station mark: Well.
Signal: Windmill tower over well.

[Latitude 31° 44′ 52.35″. Longitude 108° 48′ 25.73″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Baldy	59 40 46	239 36 55	4.12549	8.295
Gray	142 17 54	322 14 15	4.25085	11.071
North Animas	288 22 34	108 26 33	4.10135	7.847

YELLOW, LUNA COUNTY, N. MEX. (Not occupied.)

On low hill about 3 miles northwest of Tomerlin railroad station.
Station mark and signal: Bamboo cone covered with white cloth.

[Latitude 31° 59′ 52.23″. Longitude 107° 54′ 31.03″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Hermanas	9 46 01	189 44 54	4.34042	13.608
Deming South Base	229 15 27	49 17 43	3.94870	5.521
Wart	323 17 21	143 18 30	3.75903	3.568

YOAKUM, LUNA COUNTY, N. MEX.

On hill about 4 miles northeast of Birchfield's Board ranch.
Station mark: Bronze tablet.
Signal: White quadripod over mark.

[Latitude 32° 00′ 12.48″. Longitude 107° 21′ 31.83″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Glorious	6 08 48.85	186 07 57.25	4.3799923	14.905
Truck	8 54 52	188 53 57	4.24411	10.901
Flat	38 38 42	218 33 16	4.41430	16.131
Stiles	47 23 53.45	227 15 49.38	4.5149834	20.339
P. B. M	51 04 17	231 00 00	4.21563	10.208
Mesquite	80 27 28	260 24 05	4.00768	6.324
Waterloo	88 17 39.25	268 08 28.19	4.4363136	16.969
Sag	268 25 55.62	88 31 59.06	4.2553837	11.188
Potrillo	307 30 29.68	127 34 45.74	4.2047073	9.955
Camel	346 36 10	167 38 02	4.37996	14.904

NEW MEXICO AND TEXAS.

TRIANGULATION STATIONS.

Avis, Hope, Orange, and Queen quadrangles, N. Mex.; Salt Basin quadrangle, Tex.

EDDY AND OTERO COUNTIES, N. MEX., CULBERSON AND EL PASO COUNTIES, TEX.

In the spring of 1917 C. L. Nelson and B. H. Yoakum extended triangulation over above-named quadrangles, based on Coast and Geodetic Survey stations Black and Corduna, and connected them with stations Dry, Lewis, and Waldie, located in 1909. All positions given are on North American datum.

BATES, OTERO COUNTY, N. MEX.

About 6 miles from Otero and Chaves county line, on crest of Guadalupe Mountains, 30 miles by road northwest of Queen post office, 6 miles northwest of Indian Creek Ranger Station, 4 miles west of W. C. Bates's ranch house, near head of Little Dog Creek, 200 feet north of ranger road at a point where it reaches the crest of the range, on highest point of ridge, which is cleared of timber at this point.

Reference marks: Cross cut in large flat rock 56.21 feet west of station mark; also cross cut in small rock 51.1 feet southeast of station.

Station mark: Bronze bench-mark tablet cemented in rock flush with ground, 14.5 feet southwest of signal.

Signal: Several piñon trees lashed together and braced with poles and rock.

[Latitude 32° 23′ 57.72″. Longitude 105° 01′ 22.67″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Corduna	48 23 08.04	228 07 22.19	4.7943391	38.698
Waldie	87 56 03.13	267 43 20.40	4.5709838	23.138
Green	132 10 01.03	312 06 54.85	4.0874110	7.599
Childers	189 08 03.03	9 08 53.97	4.1930415	9.692
Hope	210 31 47	30 39 35	4.65095	27.817
Deadman	256 52 58	77 09 29	4.69458	30.756
Texas Hill	265 07 45	85 14 13	4.27823	11.792
Box	324 32 54.40	144 34 19.83	4.8569284	4.470

BOX, EDDY COUNTY, N. MEX.

Twenty-five miles by road northwest of Queen post office, on the head of north fork of Indian Creek, 1 mile west-northwest of Indian Creek Ranger Station, in the highest point of Guadalupe Mountain rim, between Little Dog Creek and the head of Indian Creek, on the most western point of timbered ridge on south side of Indian Creek. To reach station from Queen post office, take main road west about 4 miles to road forks, then take ranger road northwest to Indian tank and Indian Ranger Station, take first draw to left above Ranger Station, thence to point of first ridge on left, and to station. Coming in from the north via Bullis Spring, Sargent water tank, and Bates ranch, proceed to Indian Ranger Station and thence follow former route to station.

Reference marks: Cross cut in rock, distant 20 feet, in azimuth 164° 20′; second cross cut in rock, distant 15 feet, in azimuth 262° 42′.

Station mark: Bronze tablet cemented in rock, 4½ feet southwest from signal tree; true azimuth from mark to signal, 227° 34′.

Signal: Live piñon tree braced with four poles.

[Latitude 32° 20′ 47.46″. Longitude 104° 58′ 43.12″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Corduna	55 02 29.17	234 45 19.04	4.7918364	38.476
Waldie	96 15 10.75	276 01 03.16	4.6194232	25.869
Bates	144 34 19.83	324 32 54.40	3.8569284	4.470
Texas Hill	243 08 40	63 13 35	4.21810	10.267
Deadman	248 48 13	69 03 01	4.67375	29.316
Thayer	297 25 37	117 36 36	4.56152	22.640
Pickett	324 34 42.96	144 39 36.86	4.3961344	15.470
El Capitan	347 30 55.66	167 34 41.65	4.7132740	32.109

CHILDERS, CHAVES COUNTY, N. MEX.

Near Otero and Eddy county line, on eastern slope of Guadalupe Mountains, on last high ridge on this slope, 5 miles northeast of the Sargent tank (Prude Bros. range), 7 miles west of Childers ranch house and wells, on north side of Crooked Creek, a branch of Seven Rivers, 1 mile east of Childers & (Bob) Ware's earth tank on above creek. The ridge on which station is situated is bare except a few scattered piñon and juniper trees and has three distinct points or peaks, the station being on the middle and highest one. There is a wagon road in Crooked Creek Canyon from Hope and Lakewood, N. Mex., to Sargent tank. To reach station leave this house road at a point about 2 miles east of Childers Ware's tank and take low sloping ridge north to station.

Signal mark: Live juniper tree with branches added and braced with wire guys and poles on the north slope of peak.

Station mark: Bronze tablet cemented in large flat ledge on eastern slope of peak, 89.5 feet east of signal; true azimuth from mark to signal tree, 83° 27′.

[Latitude 32° 32′ 17.64″. Longitude 104° 59′ 47.78″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bates	09 08 53.97	189 08 03.03	4.1930415	9.692
Green	58 05 29.66	238 01 32.13	4.1334355	8.449
Prude	68 07 42.74	248 03 32.92	4.1164089	8.124
Lewis	131 56 26.07	311 52 06.64	4.2273193	10.487
Hope	221 11 52	41 18 52	4.48813	19.120
Deadman	275 13 11	95 28 53	4.66199	28.533
Texas Hill	310 00 48	130 06 26	4.33144	13.329

COFFELT, OTERO COUNTY, N. MEX.

A three-point station 1 mile north of El Paso, Hope, and Artesia automobile road, about 1.5 miles west-northwest of Coffelt tank. Station is in rock ledge in top of ridge, 0.5 mile west of head of canyon which empties just below Coffelt tank, about 3 miles east of Coffelt ranch house. Monument with base of 4 feet and 3½ feet high bears west 5 feet from station mark.

Station mark: A cross cut in top of 3 by 5 foot rock in place.

[Latitude 32° 14′ 43.96″. Longitude 105° 18′ 42.59″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Corduna	38 18 47	218 12 16	4.49257	19.316
Waldie	147 20 25	327 17 00	4.26929	11.552
El Capitan	312 32 18	132 46 37	4.76298	36.002

CORDUNA, OTERO COUNTY, N. MEX.

A Coast and Geodetic Survey station near the U. S. Geological Survey station of the same name. It is about 1¼ miles north of the Texas and New Mexico boundary, 70 miles by road or 60 miles direct north of Sierra Blanca, a town at the junction of the Southern Pacific and Texas Pacific railroads, and about 3 miles northeast of San Antonio Peak, on the highest peak in the vicinity, known locally as Wind Mountain.

Reference mark: Cross cut in top of rock, 4.63 meters from station, in azimuth 157° 48′. The U. S. Geological Survey station Corduna, marked by a cairn, is 7.8 meters from the station in azimuth 170° 48′.

Station mark: Coast and Geodetic Survey tablet cemented in solid rock.

[Latitude 32° 01′ 31.47″. Longitude 105° 30′ 57.02″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Waldie	192 53 06.28	12 56 13.14	4.6137880	25.535
Road	200 27 41	20 29 10	4.09990	7.821
Green	216 50 33.76	37 03 15.34	4.7934725	38.621
Coffelt	218 12 16	38 18 47	4.49257	19.316
Bates	228 07 22.19	48 23 08.04	4.7943391	38.698
Box	234 45 19.04	55 02 29.17	4.7918364	38.476
Pickett	256 35 39.27	76 57 39.38	4.8255854	41.585
Saunders	258 39 24	78 46 14	4.31563	12.852
El Capitan	283 18 31.23	103 39 19.83	4.80415960	39.853

DEADMAN, EDDY COUNTY, N. MEX. (Not occupied.)

About 16 miles west-northwest from Carlsbad and 12 miles southwest from Lakewood, towns on the Pecos River branch of the Atchison, Topeka & Santa Fe Ry.; on the highest ground south of the western entrance of the road leading through Deadmans Gulch. The station is about 10 paces east of the ledge at the west side of the bluff, at a point where the town of Lakewood shows over and to left tangent of hills 3 miles north, about 9 miles south of Seven Rivers School. North face of bluff has quite a prominent V-shaped gully one-third of the distance from top and visible from road. To reach station go from Carlsbad out Rocky Arroyo road 12 miles to Arroyo, then across to Fannings Gap, follow road southward close to foot of hills to second gap. Station is on south side. To reach it from Lakewood go to Pritchard's ranch (old Fanning place), then south along west foot of hills to Deadman's Gap, which is about 2 miles south of the first road passing around the foot of a steep hill with cairn. Stand for instrument needed. Wagon to foot of hill. Water at Nelson's or Pritchard's ranch. Mail and supplies at Lakewood.

Magnetic directions and distances at station: Lakewood, 12 miles, 29½° mag.; cairn on top of hill, 2 miles, 33° mag.; cement plant Oriental, 8 miles, 54½° mag.; White Flat Top, 6 miles, 142½° mag. Sighted from Thayer, Box, Childers, and Lewis stations. Can also be sighted from Turnegan, Texas Hill, Hope, Taylor, and possibly Crow.

Station mark: U. S. Geological Survey bronze bench-mark tablet cemented in solid rock under center of signal.

Signal: Quadripod of lumber 10 feet high, covered with black cloth, and having vanes of white cloth.

[Latitude 32° 29′ 58.64″. Longitude 104° 30′ 36.08″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Box	69 03 01	248 48 13	4.67375	29.316
Bates	77 09 29	256 52 58	4.69458	30.756
Childers	95 28 53	275 13 11	4.66199	28.533
Lewis	105 07 23	284 47 19	4.77999	37.440

DRY, CHAVES COUNTY, N. MEX.

On what is probably the highest point in divide between Pinon and Cornucopia creeks, about 10 miles southeast of Pinon post office. To reach the station follow the road from Pinon along Cornucopia Creek about 8 miles, then go east about 4 miles.

Signal: Small tree braced with four poles.

Station mark: Triangulation tablet cemented in solid rock level with surface of ground.

[Latitude 32° 30′ 31.42″. Longitude 105° 15′ 28.89″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Waldie	48 08 11.22	228 03 01.35	4.3068362	12.595
Lewis	219 27 09.30	39 31 16.66	4.2752124	11.710
Prude	277 19 21.53	97 23 37.49	4.0982526	7.791
Green	286 42 43.31	106 47 11.39	4.1337825	8.455

Values from the west from Bulletin 551.

[Latitude 32° 30′ 31.56″. Longitude 105° 15′ 28.82″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Waldie	48 08 25.61	228 03 15.71	4.3068756	12.596
Chatfield	99 56 38.50	279 48 32.77	4.3789399	14.869
Chimney	161 46 10.01	341 43 50.91	4.3323988	13.358
One Tree	163 51 29	343 49 11	4.38571	15.103
Lewis	219 27 19.98	39 31 27.36	4.2752213	11.710

GREEN, OTERO COUNTY, N. MEX.

On western rim of Guadalupe Mountains, 7 miles south of "Bullis Springs" (Prude Bros. ranch), 5 miles west of Sargent water tank and ranch house (which also belong to Prude Bros.), on extreme western end of a prominent high ridge practically bare of large timber on its north side, about 500 feet east of the edge of rim rock. To reach station from the north start from Sam Lewis's tank and ranch house (now belonging to Prude Bros.), which are near main automobile road leading west from Hope, N. Mex., take mountain road leading south to "Bullis Springs," thence on south up canyon to a point where wagon road strikes telephone line and turns east, leave road and follow flat open drains south across two low divides, and keeping about half a mile to east of Prude station cross two low ridges and two canyons, turn west in last canyon to rim then station is on top of ridge to south. To reach station from the south take range road from Queen post office via Indian Creek ranger station and Bates ranch to Sargent tank, thence, west up canyon to rim, and station is on ridge to south. No road from Sargent tank, but horses or light wagon can be taken within a quarter of a mile of station.

Station mark: Bronze bench-mark tablet cemented in rock set in ground, 24 feet northeast of signal; true azimuth from mark to signal, 59° 52′.

Reference mark: A 40-penny spike in root of signal tree, 23.05 feet west of station.

Signal: Live piñon tree trimmed of lower branches and braced with wire guys.

[Latitude 32° 28′ 24.11″. Longitude 105° 07′ 09.79″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Corduna	37 03 15.34	216 50 33.76	4.7934725	38.621
Waldie	71 12 16.76	251 02 39.40	4.4731309	18.471
Dry	106 47 11.39	286 42 43.31	4.1337825	8.455
Prude	165 37 34.82	345 37 22.61	3.3784870	1.485
Childers	238 01 32.13	58 05 29.66	4.1334355	8.449
Bates	312 06 54.85	132 10 01.03	4.0874110	7.599

HOPE, EDDY COUNTY, N. MEX. (Not occupied.)

Two miles west of Hope, on west edge of Rio Penasco Valley, 1 mile west of main wagon road from Hope to Pinon post office and to El Paso, Tex., 1 mile west of wind mill, and water tank above road on a low point of ridge plainly visible southwest from Hope, N. Mex. Sighted from Bates, Childers, and Lewis stations; can also be seen from Elk, Crow, Deadman, Texas Hill, and probably Taylor. Probably would be necessary to use heliotrope signal for Elk and Taylor lines.

Reference mark: Bronze bench-mark tablet cemented in large boulder, 3 feet northeast of signal.

Signal: Tripod of lumber and wire braces, covered with white cloth and anchored with pile of rock.

[Latitude 32° 44′ 48.58″. Longitude 104° 46′ 49.28″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bates	30 39 35	210 31 47	4.65095	27.817
Childers	41 18 52	221 11 52	4.48813	19.120
Lewis	70 13 51	250 02 30	4.54286	21.688

LEWIS, CHAVES COUNTY, N. MEX.

On peak on divide between Pinon and Fourmile creeks, about 1 mile N. 64° E. from S. W. Lewis's ranch, and 15 miles east by wagon road from Pinon post office.

Signal: Tree braced with four poles.

Station mark: Triangulation tablet cemented in stone level with surface of ground.

[Latitude 32° 38′ 23.59″. Longitude 105° 07′ 49.44″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Dry	39 31 16.66	219 27 09.30	4.2752124	11.710
Hope	250 02 30	70 13 51	4.54286	21.688
Deadman	284 47 19	105 07 23	4.77999	37.440
Childers	311 52 06.64	131 56 26.07	4.2273193	10.487
Prude	358 25 59.20	178 26 08.31	4.2083454	10.039

Values from west from Bulletin 551.

[Latitude 32° 38′ 23.72″. Longitude 105° 07′ 49.34.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Dry	39 31 27.36	219 27 19.98	4.2752213	11.710
Chatfield	73 43 57.04	253 31 42.94	4.5686960	23.017
Chimney	107 29 15.77	287 22 48.42	4.2922695	12.179
One tree	115 13 14	295 06 46	4.31588	12.860
Elk	158 48 12	338 43 13	4.59802	24.625
Pajarita	157 06 55	336 57 08	4.85651	44.685

PICKETT, EDDY COUNTY, N. MEX.

Near Eddy and Otero county line, 6 miles west of Queen post office, 1 mile north of El Paso and Carlsbad automobile road, 0.75 mile north of Michael Iribarne's ranch house and water tanks, 0.5 mile east of Pickett's dugout, on north end of prominent bare ridge, locally known as Pickett Hill.

Signal: Live piñon tree braced with poles.

Reference marks: (1) Cross cut in rock flush with ground, in azimuth 172° 14′ 12″, distant 40.55 feet; (2) cross cut in rock flush with ground, in azimuth 285° 50′ 32″, distant 39.75 feet from station mark.

Station mark: Bronze tablet cemented in solid rock flush with ground; true azimuth from mark to signal, 337° 00′, distance 3.7 feet.

[Latitude 32° 09′ 48.46″. Longitude 104° 49′ 32.42″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
El Capitan	6 14 50.57	186 13 43.94	4.4820098	18.852
Corduna	76 57 39.38	256 35 39.27	4.8255854	41.585
Box	144 39 36.86	324 34 42.96	4.3961344	15.470
Texas Hill	180 44 04	0 44 00	4.44336	17.247
Thayer	259 00 34	79 06 38	4.26127	11.340

PRUDE, OTERO COUNTY, N. MEX.

On western rim of Guadalupe Mountains, on highest point near northern end of main range, 6 miles south of Bullis Springs, 3 miles south of junction of mountain rim road with forestry telephone line from Pinon post office to Carlsbad, on west summit of a prominent wooded peak, the first one south of a prominent bare peak on the mountain rim. Peak is partly cleared of timber on top. Signal can be seen from a distance of about 1 mile to north, south, or east, but can not be seen from foot of peak. Station is almost due east of Wood's tank, in Crow Flat, but can not be very well reached from that place on account of steep rocky bluff.

Signal: Live piñon tree with lower branches trimmed and additional branches lashed in top and braced with wire.

Station mark: Bronze bench-mark tablet cemented in rock set in ground, 7.5 feet south of signal; true azimuth from mark to signal, 191° 30′. Reference mark: A 40-penny nail driven in root of signal tree, 7.95 feet north of station.

[Latitude 32° 29′ 39.29″. Longitude 105° 07′ 32.52″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Waldie	66 38 43.10	246 29 17.76	4.4771897	18.644
Dry	97 23 37.49	277 19 21.53	4.0982526	7.791
Lewis	178 26 08.31	358 25 59.20	4.2083454	10.039
Childers	248 03 32.92	68 07 42.74	4.1164089	8.124
Green	345 37 22.61	165 37 34.82	3.3784870	1.485

ROAD, OTERO COUNTY, N. MEX.

A three-point station, about 5 miles northeast of Corduna, about 3 miles southwest of Shiloh tank, 950 feet southeast of road to Shiloh tank, and about 5 miles southeast of Brown's ranch. A rock monument 4 feet long, and 4 feet high bears southeast 7 feet.

Station mark: A cross chiseled in top of rock 1 foot by 2 feet, set flush with ground.

[Latitude 32° 07′ 54.27″. Longitude 105° 28′ 09.17″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ″ ″	*Log. meters.*	*Miles.*
Corduna	20 29 10	200 27 41	4.09990	7.821
Waldie	189 35 30	9 37 03	4.45738	17.813
El Capitan	294 41 50	115 01 12	4.80194	39.381

SAUNDERS, OTERO COUNTY, N. MEX.

A three-point station, 5 miles east of A. Griffin's ranch house, 1½ miles northwest of Saunder's ranch house, 160 feet southwest of road between Griffin's ranch and Orange post office, on top of hill, in exposed rocky ledge; a rock monument 3 feet high bears west 3 feet from station mark.

Station mark: Cross cut in rock in place.

[Latitude 32° 03′ 42.92″. Longitude 105° 18′ 03.92″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Corduna	78 46 14	258 39 24	4.31563	12.852
El Capitan	294 17 52	114 31 48	4.66016	28.413
Black	344 59 10	165 04 01	4.74932	34.886

TEXAS HILL, EDDY COUNTY, N. MEX. (Not occupied.)

About 35 miles by road north of Queen post office, 40 miles by road west-southwest of Lakewood, on east slope of Guadalupe Mountains, on prominent, high, bare ridge, known locally as Texas Hill, half a mile north of a point where wagon road from Queen post office to Hope crosses the ridge. Texas Hill is bare of timber except a few scattered piñon and juniper trees. Water at tank 3 miles southwest of station, also at Acre tank, 6 miles east on Lakewood road. Sighted from Thayer, Pickett, Bates, Box, Prude, Green, and Childers stations. Can be seen also from Hope, Deadman, and Turnegan stations.

Signal: Quadripod 7 feet high with tree top in center 12 feet high.

Reference mark: Bronze bench-mark tablet cemented in solid rock 10 feet west of signal. Point computed is signal.

[Latitude 32° 24′ 49.46″. Longitude 104° 48′ 19.04″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pickett	0 44 00	180 44 04	4.44336	17.247
Box	63 13 35	243 08 40	4.21810	10.267
Bates	85 14 13	265 07 45	4.27823	11.792
Childers	130 06 26	310 00 48	4.33144	11.329
Thayer	324 07 21	144 13 29	4.47652	18.615

THAYER, EDDY COUNTY, N. MEX.

Seven miles east of Queen post office, 1 mile S. 75° W. of Thayer's ranch house, three-fourths of a mile N. 35° W. of an old, vacant ranch house on Thayer's holding, half a mile S. 18° W. of road fork leading to Thayer's ranch; on south side of main road from Queen post office to Carlsbad, on top of farthest west one of several prominent cone peaks in the immediate vicinity. Good water at Thayer's ranch.

Signal: Small piñon tree cut with branches left in top and braced with four poles.

Station mark: Bronze tablet cemented in rock flush with ground under center of signal.

[Latitude 32° 11′ 40.92″. Longitude 104° 38′ 08.45″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pickett	79 06 38	259 00 34	4.26127	11.340
Box	117 36 36	297 25 37	4.56152	22.640
Texas Hill	144 13 29	324 07 21	4.47652	18.615

WALDIE, OTERO COUNTY, N. MEX.

On prominent point on dividing ridge between Sacramento flats and Cornucopia Creek. A deep saddle is just east of station. Waldie's ranch (horse camp) about 8 miles distant bears S. 77° W. Warren's ranch is about 6 miles distant, N. 68° W. Station is about 15 miles south of Pinon post office.

Signal: Tripod 8 feet high made of lumber.

Station mark: Triangulation tablet cemented in stone level with surface of ground.

[Latitude 32° 23′ 11.91″. Longitude 105° 25′ 06.41″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Road	9 37 03	189 35 30	4.45738	17.813
Corduna	12 56 13.14	192 53 06.28	4.6137880	.....
Dry	228 03 01.35	48 08 11.22	4.3068362	12.595
Prude	246 29 17.76	66 38 43.10	4.4771897	18.644
Green	251 02 39.40	71 12 16.76	4.4731309	18.471
Bates	267 43 20.40	87 56 03.13	4.5709838	23.138
Box	276 01 03.16	96 15 10.75	4.6194232	25.869
El Capitan	316 03 39.25	136 21 27.64	4.8811708	47.263
Croffelt	327 17 00	147 20 25	4.26929	11.552

Values from west from Bulletin 551.

[Latitude 32° 23′ 12.05″. Longitude 105° 25′ 06.43″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pumpkin	93 11 48.24	272 56 45.62	4.6443584	27.397
Prather	103 25 53	283 19 31	4.28170	11.888
Culp	128 41 51.20	308 31 20.48	4.5935160	24.371
Jeffries	143 19 30	323 12 05	4.55803	22.458
Chatfield	154 16 56.59	334 14 01.73	4.2919620	12.171
Chimney	193 46 04.99	13 48 56.80	4.5436095	21.725
Dry	228 03 15.71	48 08 25.61	4.3068756	12.596

BLACK, EL PASO COUNTY, TEX.

A Coast and Geodetic Survey station 30 miles direct and 35 miles by road N. 23° E. from Sierra Blanca, a town at the junction of the Southern Pacific and the Texas & Pacific railroads, and on the highest and most southern point of the southeast end of a small range of isolated mountains, known locally as the Black Mountains but having the name Sierra Prieta Mountains on the U. S. Geological Survey map of this region. The station is about 400 meters south of the U. S. Geological Survey triangulation station Salt, which is marked by a large rock on a very rough peak of about the same height as the one described above. The reference mark, a galvanized nail driven into a crevice in a rock 6 inches below its top and on the opposite side of the rock from the station, is 3.39 meters from the station in azimuth 82° 54′.

Station mark: Disk cemented in solid rock.

[Latitude 31° 34′ 21.90″ (U. S. G. S.), 31° 34′ 21.899″ (C. & G. S.). Longitude 105° 08′ 52.36″ (U. S. G. S.), 105° 08′ 52.357″ (C. & G. S.).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Saunders	165 04 01	344 59 10	4.74932	34.886
El Capitan	217 32 17.67	37 41 21.67	4.6494444	27.720
Diablo (C. & G. S.)	331 47 53.41	151 55 11.47	4.6732251	.....
Eagle (C. & G. S.)	355 15 34.54	175 17 31.54	4.8601711	.....
Quitman (C. & G. S.)	35 20 58.54	215 10 05.53	4.7592565	.....

EL CAPITAN, CULBERSON COUNTY, TEX.

The highest point in Texas. It is about 50 miles direct and 65 miles by road southwest of Carlsbad, N. Mex., a town on the Pecos River, 8 miles south of New Mexico and Texas State line, on farthest south and highest point of the main range of the Guadalupe Mountains, known locally as Guadalupe Peak. The peak is cone-shaped in appearance, and has a double top, and a perpendicular rock bluff about 1,000 feet high on the southwest side. To reach station go to Glover's ranch at mouth of Pine Canyon, 1½ miles west of Frijole post office. Pine Springs at mouth of Pine Canyon is known throughout the surrounding country and furnishes an abundant supply of good water. Mountain can best be climbed, on foot only, at a point about 1 mile south of Pine Spring, going up the second ridge north of the flatiron-shaped point known as Signal Point. The station is near the center of the extreme top of the peak.

Signal: Cairn 6 feet high with piñon tree in center, the whole being about 10 feet high.

Station mark: Bronze tablet cemented in solid rock, near east edge of bluff, 15 feet from monument; true azimuth from tablet to signal 123° 21′.

[Latitude 31° 53′ 29.27″. Longitude 104° 51′ 38.05″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Black	37 41 21.67	217 32 17.67	4.4694444	27.720
Corduna	103 39 19.83	283 18 32.23	4.8041596	39.583
Saunders	114 31 48	294 17 52	4.66016	28.413
Road	115 05 02	294 41 50	4.80194	39.381
Coffelt	132 46 37	312 32 18	4.76298	36.002
Waldie	136 21 27.64	316 03 39.25	4.8811708	47.263
Box	167 34 41.65	347 30 55.66	4.7132740	32.109
Pickett	186 13 43.94	6 14 50.57	4.4820098	18.852

WYOMING.

TRIANGULATION STATIONS.

Como Ridge, Difficulty, Hanna, Leo, and Saddleback Hills quadrangles.

CARBON COUNTY.

During the season of 1916 C. L. Nelson extended triangulation over the above-named quadrangles, based on stations already located in this area. Twenty-two new points were located, including 12 corners of the General Land Office.

BONE, CARBON COUNTY, WYO. (Not occupied.)

On highest point of extreme northeast one of T B Hills, about 3 miles north of Doolins ranch.

Station mark: A small pine tree set in cairn.

[Latitude 42° 06′ 28.63″. Longitude 106° 13′ 01.06.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Two	27 51 53.82	207 43 52.69	4.5505500	22.075
Quealey	101 09 37.56	280 56 34.35	4.4365058	16.977
Chalk	141 08 00.80	320 57 43.13	4.5254332	20.835
Como	332 05 54.88	152 12 15.30	4.4473613	17.407
Flat	347 49 36.43	167 51 04.82	4.1585800	8.952

C, CARBON COUNTY, WYO. (Not occupied.)

On highest point of hill about 10 miles southeast of Hanna, 1 mile west-northwest of Bloody Lake, 1½ miles west of Hanna and Elk Mountain road.

Station mark: Cairn around center pole of sawed lumber tripod.

[Latitude 41° 45′ 27.54″. Longitude 106° 30′ 10.08.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
St. Mary	98 33 10.06	278 19 39.93	4.4531860	17.642
Corner 14	141 18 03.22	321 15 06.31	3.9913914	6.092
One	160 00 29.95	339 57 27.06	4.2667950	11.485
Corner 16	160 29 24.39	340 26 27.34	4.2629017	11.383
Corner 21	204 24 44.81	24 26 25.30	3.9252941	5.232
Two	223 39 37.91	43 43 04.17	4.0147784	6.429

COMO, ALBANY AND CARBON COUNTIES, WYO.

Situated in sec. 16, T. 22 N., R. 77 W., about 7 miles east of Medicine Bow, on a high bald ridge, locally known as Como Ridge. This station can be reached by driving east along the railroad from Medicine Bow to a point where the road bends sharply toward the south, then follow a dim trail on the south side of the ridge for a

mile, and thence direct to the station. The station is nearly due south of the east end of Aurora Lake.

Reference marks: 1. Arrowhead cut in rock, distant 9.9 feet N. 60° E. 2. Arrowhead cut in rock, distant 24.3 feet W.

Station mark: Tablet in solid rock.

Signal: Tripod of sawed lumber.

[Latitude 41° 53′ 05.83″. Longitude 106° 03′ 32.50″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rock	21 05 58.75	200 59 14.23	4.5925010	24.314
Pine	41 41 49.01	221 37 22.79	4.1415870	8.609
Derrick	49 24 41.88	229 17 02.10	4.3216891	13.033
Elk Tablet	54 22 17.43	234 03 39.12	4.6795845	29.712
Corner 24	58 42 22.63	238 30 58.39	4.4431397	17.238
Two	77 29 21.88	257 15 02.42	4.4835655	18.920
Corner 18	95 29 56.06	275 13 48.06	4.5258112	20.853
Medicine Bow Tank	96 52 15.58	276 46 40.13	4.0668672	7.248
Corner 25	102 48 22.36	282 41 35.25	4.1595455	8.972
Corner 23	97 54 59.58	277 43 33.21	4.3786513	14.859
Ninemile	104 21 00.77	284 08 01.08	4.4432605	17.243
Corner 22	112 23 07.87	292 11 40.67	4.4083957	15.913
Freezeout	131 56 40.59	311 46 36.45	4.4461032	17.356
Quealey	127 04 33.68	306 45 11.56	4.6986049	31.042
Flat	136 46 11.22	316 41 19.48	4.1665644	9.118
Bone	152 12 15.30	332 05 54.88	4.4473613	17.407

CORNER 14, CARBON COUNTY, WYO.

Three-point location at corner of Tps. 21 and 23 N., Rs. 81 and 82 W. Instrument was placed 93.7 feet from corner, true azimuth, 179° 06′ 02.79″, but angles were reduced to corner.

[Latitude 41° 49′ 35.45″. Longitude 106° 34′ 35.68″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
D mark	53 57 15.65	233 52 39.69	4.0729975	7.351
One	178 49 56.41	358 49 50.68	3.9876828	6.040
Yellow	195 58 33.76	15 59 48.33	3.9687869	5.783
Two	270 40 07.97	90 46 31.41	3.1229845	0.825
C	321 15 06.31	141 18 03.22	3.9913914	6.092
Elk Tablet	348 46 18.39	168 48 40.81	4.3401901	13.600

CORNER 15, CARBON COUNTY, WYO.

Three-point location at corner of secs. 30, 31, 25, and 36, T. 21 N., Rs. 81 and 82 W. Instrument was placed 4 feet from corner, true azimuth, 188° 28′ from corner. Angles were reduced to corner.

[Latitude 41° 45′ 16.16″. Longitude 106° 34′ 34.17″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
D mark	96 10 27.50	276 05 50.69	3.9848815	6.001
One	179 14 47.88	359 14 41.13	4.2484686	11.011
Yellow	188 28 46.98	8 30 00.59	4.2338634	10.647
Elk Tablet	342 35 06.44	162 37 07.84	4.1497064	8.771

CORNER 16, CARBON COUNTY, WYO.

Township corner: Tps. 22 and 23 N., Rs. 81 and 82 W. Located by measurement from station One. This corner is 742.04 feet southeast of station One, true azimuth, 297° 02′ 27.27″.

[Latitude 41° 54′ 47.14″. Longitude 106° 34′ 35.54″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
One	117 01 57.46	297 01 51.62	2.3544431	0.141
Yellow	284 39 19.39	104 40 33.52	3.4221817	16.426
C	340 26 27.34	160 29 24.39	4.2629017	11.383

CORNER 17, CARBON COUNTY, WYO.

Three-point station at corner of secs. 19, 30, 24, and 25, T. 21 N., Rs. 80 and 81 W.

[Latitude 41° 46′ 07.87″. Longitude 106° 27′ 37.40″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
D mark	88 23 56.61	268 14 42.16	4.2840961	11.952
Freezeout	201 32 58.22	21 39 00.63	4.5305632	21.082
Two	210 07 24.62	30 09 09.16	3.8580645	4.481

CORNER 18, CARBON COUNTY, WYO.

Three-point station at corner of Tps. 22 and 23 N., Rs. 80 and 81 W.

[Latitude 41° 54′ 47.52″. Longitude 106° 27′ 41.98″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Elk Tablet	9 42 05.22	189 39 32.22	4.4989583	19.602
Yellow	84 26 50.09	264 23 28.49	3.8455076	4.354
Como	275 13 48.06	95 29 56.06	4.5258112	20.853

CORNER 19, CARBON COUNTY, WYO.

Three-point station at corner of Tps. 23 and 24 N., Rs. 80 and 81 W. Instrument was placed 1,347.06 feet northwest of corner, true azimuth, 138° 16′ 24.42″. Angles reduced to corner.

[Latitude 41° 59′ 59.31″. Longitude 106° 27′ 45.13″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
One	45 07 14.66	225 02 34.40	4.1323974	8.428
Freezeout	244 58 58.00	65 05 05.66	4.1441409	8.659
Flat	274 58 12.06	95 09 31.80	4.3706779	14.589

CORNER 20, CARBON COUNTY, WYO.

Three-point location at corner of Tps. 23 and 24 N., Rs. 78 and 79 W. Instrument was placed 1,522.8 feet southwest of corner, true azimuth, 43° 57′ 46.96″. Angles reduced to corner.

[Latitude 42° 00′ 02.97″. Longitude 106° 13′.34.69″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Two	39 03 07.95	218 55 29.79	4.4000750	15.611
Quealey	123 25 44.04	303 13 04.21	4.4940561	19.382
Freezeout	129 48 26.90	309 45 05.22	3.9551116	5.604
Flat	299 47 56.02	119 49 46.80	3.6427533	2.730

CORNER 21, CARBON COUNTY, WYO.

Three-point station at corner of Tps. 21 and 22 N., Rs. 80 and 81 W. Instrument was placed 451 feet northeast of corner, true azimuth, 220° 41′ 34.98″. Angles reduced to corner.

[Latitude 41° 49′ 36.02″. Longitude 106° 27′ 39.28″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
C	24 26 25.30	204 24 44.81	3.9252941	5.232
Freezeout	206 26 29.70	26 32 32.79	4.4480716	17.435
Two	272 52 23.85	92 54 09.69	3.5643713	2.279

CORNER 22, CARBON COUNTY, WYO.

Three-point station at corner of secs. 7, 18, 12, and 13, T. 23 N., Rs. 79 and 80 W.

[Latitude 41° 58′ 20.66″. Longitude 106° 20′ 40.93″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ninemile	47 54 44.34	227 53 08.60	3.6340140	2.675
Freezeout	197 50 44.56	17 52 08.21	3.9721123	5.827
Como	292 11 40.67	112 23 07.87	4.4083957	15.913
Pine	324 04 04.98	144 11 05.00	4.3937684	15.386

CORNER 23, CARBON COUNTY, WYO.

Three-point station at corner of Tps. 22 and 23 N., Rs. 79 and 80 W. Instrument was placed 405.2 feet southeast of corner, true azimuth, 303° 25′ 44.03″. Angles reduced to corner.

[Latitude 41° 54′ 51.33″. Longitude 106° 20′ 40.28″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Two	31 13 18.27	211 10 24.56	4.0639976	7.200
Ninemile	138 04 03.58	318 02 30.46	3.6815470	2.985
Flat	241 19 30.76	61 26 05.95	4.1906905	9.639
Como	277 43 33.21	97 54 59.58	4.3786513	14.859
Pine	313 06 51.34	133 13 50.80	4.2985143	12.356

CORNER 24, CARBON COUNTY, WYO.

Three-point station at corner of secs. 30, 31, 25, and 36, T. 21 N., Rs. 79 and 80 W. Instrument was placed 838.7 feet northeast of corner, true azimuth, 235° 05′ 25.63″. Angles reduced to corner.

[Latitude 41° 45′ 17.50″. Longitude 106° 20′ 38.61″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Elk Tablet	48 14 30.32	228 07 15.96	4.3067216	12.591
Como	238 30 58.39	58 42 22.63	4.4431397	17.238
Pine	254 31 43.28	74 38 40.97	4.1775241	9.351
Rock	336 17 01.41	156 21 39.43	4.3820026	14.975

CORNER 25, CARBON COUNTY, WYO.

Three-point station at corner of Tps. 22 and 23 N., Rs. 78 and 79 W. Instrument was placed 592.8 feet southeast of corner, true azimuth, 337° 38′ 46.91″. Angles reduced to corner.

[Latitude 41° 54′ 53.56″. Longitude 106° 13′ 42.09″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Two	58 05 12.58	237 57 39.74	4.2685593	11.532
Ninemile	105 53 08.75	285 46 56.18	4.1243419	8.274
Como	282 41 35.25	102 48 22.36	4.1595455	8.972
Pine	340 31 10.01	160 33 30.43	4.1616838	9.016

D MARK, CARBON COUNTY, WYO. (Not occupied.)

Highest point of ridge about 8 miles east of Walcott and about 10 miles southwest of Hanna.

Reference mark: Cairn surmounted by a sawed lumber quadripod, 1.2 feet distant, true azimuth, 218°.

Station mark: A bench-mark tablet set in rock.

[Latitude 41° 45′ 49.60″. Longitude 106° 41′ 29.78″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
St. Mary	105 46 16.77	285 40 19.46	4.1094658	7.995
One	209 14 28.90	29 18 59.39	4.2917249	11.887
Freezeout	224 28 57.11	44 44 14.75	4.6542049	28.026
Corner 14	233 52 39.69	53 57 15.65	4.0729975	7.351
Two	253 19 40.20	73 30 39.48	4.3771364	14.808
Corner 17	268 14 42.16	88 23 56.61	4.2840961	11.952
Corner 15	276 05 50.69	96 10 27.50	3.9848815	6.001

ELK TABLET, CARBON COUNTY, WYO.

A high, dome-shaped mountain about 15 miles south of Hanna and about 10 miles west of Elk Mountain post office. The mountain is precipitous, and there is much down timber on it, making ascent difficult. The most practicable route is from Rattlesnake Pass, on the northwest side. At one time there was a trail along this route, but at present only traces are found at intervals. Time required to ascend peak is about six hours. Summit is above timber line and consequently bald.

Reference mark (previously used as station mark): A cairn about 5 feet in diameter and 6 feet high, the center of which is 12.7 feet from station, true azimuth, 40° 12′. The position of this monument was accepted as latitude 41° 37′ 59.46″, longitude 106° 31′ 31.76″, as published in Bulletin 245, page 298.

Station mark: A bronze tablet, cemented in solid rock; true azimuth to reference mark, 40° 12′, distant 12.7 feet.

[Latitude 41° 37′ 59.54″. Longitude 106° 31′ 31.63″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Needle	24 15 41.37	204 07 27.04	4.6261579	26.273
Mount Steele	120 15 01.25	299 56 11.55	4.6563608	28.165
St. Mary	124 33 07.87	304 20 32.99	4.5024497	19.761
Corner 15	162 37 07.84	342 35 06.44	4.1497064	8.771
Corner 14	168 48 40.81	348 46 18.39	4.3401901	13.600
One	171 53 57.90	351 51 49.56	4.4983714	19.576
Yellow	176 50 17.67	356 49 29.09	4.4837730	18.929
Shirley	177 34 45.43	357 33 32.51	4.7730833	36.850
Corner 18	189 39 32.22	09 42 05.22	4.4989583	19.602
Two	202 57 21.22	23 01 41.53	4.3643810	14.379
Flat	216 28 07.70	36 41 56.02	4.6823859	29.904
Halfway	227 04 48.88	47 15 18.66	4.4745802	18.532
Corner 24	228 07 15.96	48 14 30.32	4.3067216	12.591
Como	234 03 39.12	54 22 17.43	4.6795845	29.712
Pine	239 07 31.51	59 21 43.22	4.5369989	21.397
Rock	288 56 02.59	109 07 53.78	4.4190751	16.309
Medicine Bow	330 02 24.55	150 10 42.08	4.5434254	21.716

FLAT, CARBON COUNTY, WYO.

Situated in sec. 9, T. 23, R. 78, on the west end of a hill locally known as Flat Top Mountain, and about 1 mile east and 6 miles north of Medicine Bow. The road from Medicine Bow to the T. B. ranch passes close to the east end of the hill, and one can drive to within 100 yards of the station.

Reference marks: 1. Arrowhead pointing to center, chiseled in solid rock, is 13.5 feet NE. 2. Arrowhead pointing to center, chiseled in solid rock, is 15.5 feet S. 30° W.

Station mark: Bronze tablet in solid rock.

Signal: Sawed-lumber tripod.

[Latitude 41° 58′ 52.15″. Longitude 106° 10′ 49.09″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rock	4 48 20.60	184 46 26.50	4.6755027	29.434
Elk Tablet	36 41 56.02	216 28 07.70	4.6823859	29.904
Two	48 36 49.23	228 27 20.55	4.4181452	16.274
Corner 23	61 26 05.95	241 19 30.76	4.1906905	9.639
Corner 19	95 09 31.80	274 58 12.06	4.3706779	14.589
Corner 20	119 49 46.80	299 47 56.02	3.6427533	2.730
Quealey	123 00 45.67	302 46 15.00	4.5511920	22.159
Freezeout	126 33 54.02	306 28 41.53	4.1260229	8.306
Bone	167 51 04.82	347 49 36.43	4.1585800	8.952
Como	316 41 19.48	136 46 11.22	4.1665644	9.118
Pine	357 38 43.16	117 39 08.17	4.3233190	13.082
Medicine Bow Tank	9 15 47 01	189 15 03.04	3.9741204	5.854
Elk Monument	36 41 57.10	216 28 08.70	4.6824208	29.907

FREEZEOUT, CARBON COUNTY, WYO. (Not occupied.)

On highest point of Freezeout Mountain, about 6 miles north of bridge on road from Medicine Bow to Beer Mug ranch on the only high, timbered ridge.

Station mark: Trimmed pine tree.

[Latitude 42° 03′ 09.97″. Longitude 106° 18′ 35.96″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Corner 22	17 52 08.21	197 50 44.56	3.9721123	5.847
Two	19 20 16.46	199 15 59.42	4.4282020	16.655
Corner 17	21 39 00.63	201 32 58.22	4.5305632	21.082
Corner 21	26 32 32.79	206 26 29.70	4.4480716	17.435
D mark	44 44 14.75	224 28 57.11	4.6542049	28.026
One	55 25 54.97	235 15 07.25	4.4329743	16.839
Corner 19	65 05 05.66	244 58 58.00	4.1441409	8.659
Quealey	120 47 34.92	300 38 16.68	4.3473948	13.828
Flat	306 28 41.53	126 33 54.02	4.1260229	8.306
Como	311 46 36.45	131 56 40.59	4.4461032	17.356
Corner 20	309 45 05.22	129 48 26.90	3.9551116	5.604

HALFWAY, CARBON COUNTY, WYO. (Not occupied.)

Near the center of a low ridge known as Halfway Hill, 9 miles southwest of Medicine Bow, half a mile west of Elk Mountain and Medicine Bow road.

Station mark: A quadripod of sawed lumber.

[Latitude 41° 48′ 56.79″. Longitude 106° 15′ 45.37″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Elk Tablet	47 15 18.66	227 04 48.88	4.4745803	18.532
Two	94 37 45.09	274 31 34.89	4.1090507	7.987
Pine	289 03 46.26	109 07 28.73	3.9113271	5.066

NINEMILE, CARBON COUNTY, WYO. (Not occupied.)

Highest point of hill, known as Ninemile Hill, 2.5 miles north and a little west of Como railroad station.

Station mark: A tripod of sawed lumber.

[Latitude 41° 56′ 47.11″. Longitude 106° 22′ 59.64″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles*
Two	11 41 32.71	191 40 11.98	4.1389282	8.556
Corner 22	227 53 08.60	47 54 41.34	3.6340140	2.675
Como	284 08 01.08	104 21 00.77	4.4432605	17.243
Corner 25	285 46 56.18	105 53 08.75	4.1243419	8.274
Pine	314 03 05.57	134 11 38.17	4 3922290	15.331
Corner 23	318 02 30.46	138 04 03.58	3.6815470	2.985

ONE, CARBON COUNTY, WYO.

On top and about 20 feet from west point of high ridge 4 miles northwest of Hanna.

Reference mark: Quadripod of sawed lumber over station.

Station mark: A bronze tablet cemented in rock 6 by 6 inches, 2 feet long, set 1.5 feet in ground.

[Latitude 41° 54′ 50.45″. Longitude 106° 34′ 44.28″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
D mark	29 18 59.39	209 14 28.90	4.2817249	11.887
St. Mary	58 48 14.12	238 37 45.71	4.4051824	15.796
Quealey	186 38 10.64	6 39 41.50	4.4307055	16.752
Corner 19	225 02 34.40	45 07 14.66	4.1323974	8.428
Freezeout	235 15 07.25	55 25 54.97	4.4329743	16.839
Yellow	285 37 23.43	105 38 43.40	3.4571969	1.781
Corner 16	297 01 51.62	117 01 57.46	2.3544431	.141
Two	306 14 20.73	126 20 50.33	4.2227627	10.378
C	339 57 27.06	160 00 29.95	4.2667950	11.485
Elk	351 51 49.56	171 53 57.90	4.4983714	19.576
Corner 14	358 49 50.68	178 49 56.41	3.9876828	6.040
Corner 15	359 14 41.13	179 14 47.88	4.2484686	11.011

PINE, CARBON COUNTY, WYO.

Near west end of Pine Ridge where it breaks off in a steep bluff in sec. 16, T. 21 N., R. 78 W. The station is nearly in line with a wire fence running north and south to the south of the ridge. The station can be reached by wagon, going about 10 miles from Medicine Bow on the Arlington road, then driving nearly to the top from the south side of ridge.

Reference marks: 1. Arrow pointing to center, east, distant 14 feet. 2. Arrow pointing to center, S. 70° W., distant 21 feet.

Station mark: Tablet set in sandstone.

Signal: Poles and plank.

[Latitude 41° 47′ 30.34″. Longitude 106° 10′ 11.63″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rock	10 28 19.44	190 26 00.67	4.4250546	16.535
Elk Tablet	59 21 43.22	239 07 31.51	4.5369989	21.397
Derrick	63 44 02.53	243 40 49.07	3.8739182	4.638
Corner 24	74 38 40.97	254 31 43.28	4.1775241	9.351
Two	100 17 04.65	280 07 12.05	4.3190955	12.955
Halfway	109 07 28.73	289 03 46.26	3.9113271	5.066
Corner 23	133 13 50.80	313 06 51.34	4.2985143	12.356
Ninemile	134 11 38.17	314 03 05.57	4.3922290	15.331
Corner 22	144 11 05.00	324 04 04.98	4.3937684	15.386
Corner 25	160 33 30.43	340 31 10.01	4.1616838	9.016
Medicine Bow Tank	168 32 12.12	348 31 03.23	4.0783118	7.442
Flat	177 39 08.17	357 38 43.16	4.3233191	13.082
Como	221 37 22.79	41 41 49.01	4.1415870	8.609
Elk Monument	59 21 35.70	239 07 23.91	4.5370451	21.399

QUEALEY, CARBON COUNTY, WYO.

On Shirley Mountain, on rock having 20 by 20 foot base and 30 feet high, on highest point of ridge that parallels the ridge on which Shirley station is located. It is about 2 miles southeast of Quealey ranch sawmill and about 450 feet northeast of a similar rock which marks the southern point of the ridge. Station can be reached by wagon through Quealey ranch to the ranch sawmill, thence by saddle animal.

Reference mark: Tall lodgepole pine tree set in quadripod, distant from station 5.15 feet, true azimuth, 109° 12′.

Station mark: Bronze tablet cemented in solid rock.

[Latitude 42° 09′ 18.36″. Longitude 106° 32′ 28.58″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
One	6 39 41.50	186 38 10.64	4.4307055	16.752
St. Mary	31 55 17.85	211 43 17.21	4.6725558	29.235
Shirley	136 56 15.62	316 55 40.56	3.2449948	1.092
Chalk	195 15 34.02	15 18 21.05	4.3344902	13.423
Bone	280 56 34.35	101 09 37.56	4.4365058	16.977
Freezeout	300 38 16.68	120 47 34.92	4.3473948	13.828
Corner 20	303 13 04.21	123 25 44.04	4.4940561	19.382
Como	306 45 11.56	127 04 33.68	4.6986049	31.042
Two	344 14 54.10	164 19 53.83	4.5807722	23.666
Yellow	0 45 55.71	180 45 45.01	4.4401606	17.120
Flat	302 46 15.00	123 00 45.67	4.5511920	22.159

ROCK, CARBON COUNTY, WYO.

Situated about 3 miles south of Arlington post office and 1.5 miles east of Rock Creek. The point, locally known as Rock Mountain, was cleared of timber and a quadripod signal erected on highest point. Can be reached with pack outfit by blind trail from Arlington. On account of windfalls this point is difficult to approach except by trail.

Station mark: A bronze tablet cemented in solid rock.

[Latitude 41° 33′ 22.12″. Longitude 106° 13′ 40.34″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Medicine Bow	18 54 38.19	198 51 06.06	4.3613261	14.278
Elk Tablet	109 07 53.78	288 56 02.59	4.4190751	16.309
Corner 24	156 21 39.43	336 17 01.41	4.3820026	14.975
Derrick	175 16 51.82	355 15 57.53	4.3604706	14.250
Flat	184 46 26.50	4 48 20.60	4.6755027	29.434
Two	152 16 59.74	332 09 27.32	4.5282984	20.972
Pine	190 26 00.67	10 28 19.44	4.4250546	16.535
Como	200 59 14.23	21 05 58.75	4.5925010	24.314

ST. MARY, CARBON COUNTY, WYO.

Situated 2.5 miles north of Walcott station on the Union Pacific R. R., on a high bare point, known as St. Marys Hill.

Station mark: A bronze triangulation tablet set in rock 10 by 5 by 2 feet, over which is built a cairn 6 feet high.

[Latitude 41° 47′ 42.61″. Longitude 106° 50′ 26.08″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Sage (2)	47 30 43.33	227 22 00.52	4.3918949	15.320
Greenville	69 56 02.79	249 46 23.71	4.3302768	13.293
Mount Steele	11 05 52.95	289 59 37.79	4.1406498	8.590
Pedro	180 30 37.46	0 30 52.30	4.7555596	35.392
Shirley	209 40 36.55	29 52 02.34	4.6770115	29.537
Quealey	211 43 17.21	31 55 17.85	4.6725558	29.235
One	238 37 45.71	58 48 14.12	4.4051824	15.796
Yellow	242 59 35.67	63 11 23.91	4.4387141	17.063
Two	264 28 56.65	84 45 53.66	4.5486253	21.977
C	278 19 39.93	98 33 10.06	4.4531860	17.642
D	285 40 19.46	105 46 16.77	4.1094658	7.995
Elk Tablet	304 20 32.99	124 33 07.87	4.5024497	19.761
Needle	350 35 58.45	171 00 15.64	4.7579061	35.584

TWO, CARBON COUNTY, WYO.

On the top of the north hill of the Saddleback Hills. It is about 7 miles southeast of Hanna and 1 mile east-southeast of Jacks Spring ranch house.

Station mark: A bronze tablet cemented in rock 6 by 10 inches by 1.5 feet, set flush with ground. A small pine tree in cairn was erected over tablet.

[Latitude 41° 49′ 30.04″. Longitude 106° 25′ 00.56″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Elk Tablet	23 01 41.53	202 57 21.22	4.3643810	14.379
Corner 17	30 09 09.16	210 07 24.62	3.8580645	4.481
C	43 43 04.17	223 39 37.91	4.0147784	6.429
D mark	73 30 39.48	253 19 40.20	4.3771364	14.808
St. Mary	84 45 53.66	264 28 56.65	4.5486253	21.977
Corner 14	90 46 31.41	270 40 07.97	3.1229845	.825
Corner 21	92 54 09.69	272 52 23.85	3.5643713	2.279
One	126 20 50.33	306 14 20.73	4.2722627	10.378
Yellow	130 27 48.70	310 22 39.03	4.1478636	8.734
Quealey	164 19 53.83	344 14 54.10	4.5807722	23.666
Ninemile	191 40 11.98	11 41 32.71	4.1389282	8.556
Freezeout	199 15 59.42	19 20 16.46	4.4282020	16.655
Bone	207 43 52.69	27 51 53.82	4.5505500	22.075
Corner 23	211 10 24.56	31 13 18.27	4.0639976	7.200
Corner 20	218 55 29.79	39 03 07.95	4.4000750	15.011
Flat	228 27 20.55	48 36 49.23	4.4181452	16.274
Corner 25	237 57 39.74	58 05 12.58	4.2685593	11.532
Como	257 15 02.42	77 29 21.88	4.4835655	18.920
Halfway	274 31 34.89	94 37 45.09	4.1090507	7.987
Pine	280 07 12.05	100 17 04.65	4.3190955	12.955
Rock	332 09 27.32	152 16 59.74	4.5282984	20.972

YELLOW, CARBON COUNTY, WYO. (Not occupied.)

Top of round yellow hill about 4 miles north of Hanna and about half a mile west of Hanna and Shirley Basin road at summit.

Station mark: Cairn about 5 feet high.

[Latitude 41° 54′ 25.43″. Longitude 106° 32′ 44.55″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Corner 15	8 30 00.59	188 28 46.98	4.2338634	10.647
Corner 14	15 59 48.33	195 58 33.76	3.9687869	5.783
St. Mary	63 11 23.91	242 59 35.67	4.4387141	17.063
Corner 16	104 40 33.52	284 39 19.39	3.4221817	16.426
One	105 38 43.40	285 37 23.43	3.4571969	1.781
Quealey	180 45 45.01	0 45 55.71	4.4401606	17.120
Corner 18	264 23 28.49	84 26 50.09	3.8455076	4.354
Two	310 22 39.03	130 27 48.70	4.1478636	8.734
Elk Tablet	356 49 29.09	176 50 17.67	4.4837730	18.929

COLORADO.

TRIANGULATION STATIONS.

Conejos, La Jara, and Summitville quadrangles.

ALAMOSA, ARCHULETA, CONEJOS, MINERAL, AND RIO GRANDE COUNTIES.

During the season of 1919 C. L. Nelson extended triangulation control over the above-named quadrangles.

Sixteen points were located, based on Pagosa and South River stations, North American datum.

ALAMOSA, ALAMOSA COUNTY, COLO.

Center of large iron water tank just south of railroad track and two blocks southwest of railroad station at Alamosa, Colo.

Station mark: Center of tank.

[Latitude 37° 27′ 55.35″. Longitude 105° 52′ 12.68″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
La Jara	20 42 50	200 40 25	4.35981	14.228
Prospect	31 58 38.74	211 47 21.14	4.7045559	31.471
Chiquita	69 13 10.81	248 59 32.49	4.5497370	22.034
Bennett	92 28 14.94	272 07 40.54	4.6980352	31.002
Eight-mile	98 16 31	278 10 21	4.17921	9.390
Sego	353 27 14.23	173 28 56.04	4.5607597	22.600

BANDED PEAK, ARCHULETA COUNTY, COLO.

Highest part of ridge forming top of mountain at head of West Fork of Chama River. Ridge can be reached from either Navajo River or Chama River on a trail which crosses ridge about 2 miles south of station. The plateau from which the ridge rises can also be reached by the Manga trail, which leaves South Fork of Conejos River near the fork with Elk Creek. After reaching the plateau one can ride directly to the station, about 10 miles west.

Signal: Conical cairn about 10 feet in diameter and 8 feet high.

Station mark: Bronze tablet cemented in rock.

[Latitude 37° 06′ 16.93″. Longitude 106° 37′ 36.12″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pagosa	134 08 10.07	313 52 11.44	4.7341054	33.686
Summit	167 15 04.97	347 12 33.07	4.4471880	17.400
Bennett	202 05 24.95	22 12 25.80	4.6568431	28.196
Chiquita	230 58 56.02	51 12 48.72	4.6394950	27.092
Flat	280 00 20.73	100 04 10.40	3.9799844	5.934

BELLEVIEW, RIO GRANDE COUNTY, COLO. (Not occupied.)

On east end of Belleview Mountain, locally known as North Mountain, about 1 mile north of nearly abandoned town of Summitville.

Station mark: A rock monument having a 7-foot base and 9 feet high, probably erected by the Wheeler Survey.

Reference mark: The point occupied by theodolite is a hole drilled in a large rock (cracked), in which is cemented a nail with the head projecting 0.25-inch, and over which a rock monument having a 2-foot base and 3 feet high was erected. True bearing from station, 227° 43′, distance, 9.9 feet.

[Latitude 37° 27′ 02.54″; 02.48″ (B). Longitude 106° 36′ 15.19″; 14.98″(B).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Summit (B)	36 23 20.74	216 19 59.08	4.1390418	.....
Pagosa (B)	89 06 35.64	268 49 43.89	4.6118040	.....
South River (B)	112 28 06.51	292 14 20.07	4.5567810	.....
Del Norte (E)	193 15 16.41	13 16 46.77	4.2007172	9.864
Bennett (E)	256 24 49.58	76 31 02.92	4.1906878	9.639
Summit (N)	36 23 32	216 20 10	4.13900	8.558
South River (N)	112 28 08	292 14 23	4.55672	22.391
Bennett (N)	256 24 52	76 31 05	4.19063	9.638

(B) Work done by H. L. Aaldwin, jr., in 1906.

BENNETT, RIO GRANDE COUNTY, COLO.

Situated on the highest part of Bennett Peak and at the headwaters of San Francisco Creek.

Signal: A cairn of 4.5 feet base and 6.5 feet in height.

Station mark: A bronze tablet set in rock under center of cairn.

[Latitude 37° 29′ 00.28″ (N); 00.24″ (E). Longitude 106° 26′ 01.54″ (N); 01.25″ (E).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Belleview (E)	76 31 02.92	256 24 49.58	4.1906878	.9639
South River (E)	101 55 42.71	281 35 42.09	4.6940039	30.715
Del Norte (E)	136 00 50.46	315 56 06.92	4.2159060	10.215
East Butte (E)	194 51 25.54	14 54 33.85	4.4692850	18.308
Observatory (E)	197 28 28	.....	4.34010	13.597
Chimney (E)	209 19 48	.....	4.44964	17.498
Dog (E)	209 53 36.70	29 56 49.63	4.1926261	9.682
Center (E)	224 05 53	.....	4.66204	26.025
Red Silo (E)	226 30 21	.....	4.45018	17.520
White Silo (E)	211 07 06	.....	4.59736	24.587
Flat (N)	10 03 30.82	190 00 20.72	4.6471110	27.572
Banded (N)	22 12 25.80	202 05 24.95	4.6568431	28.196
Summit (N)	57 44 44.06	237 35 09.47	4.4396680	17.101
Belleview (N)	76 31 05	256 24 52	4.19063	9.638
South River (N)	101 55 44.19	281 35 43.77	4.6939384	30.711
Alamosa (N)	272 07 40.54	92 28 14.94	4.6980352	31.002
Chiquita (N)	311 05 07.87	131 12 02.15	4.3475967	13.834
Prospect (N)	332 37 10.65	152 46 41.86	4.7045632	31.471
Yellow Point (N)	358 58 12	178 58 20	4.25282	11.122

(E) Work done by J. R. Ellis in 1914. (N) Work done by C. L. Nelson in 1919.

BIG HORN, CONEJOS COUNTY, COLO.

Hill about 0.25 mile south of railroad, about 15 miles southwest of Conejos, Colo., near northeast edge of top of mountain.

Station mark: Bronze tablet in rock directly under trimmed part of fir tree 3 feet in diameter.

[Latitude 36° 59′ 11.77″. Longitude 106° 10′ 44.85″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Prospect	183 40 09.18	3 40 25.02	4.0065496	6.307
Sego	241 38 11.79	61 51 03.34	4.5551649	22.311
Ortiz	263 40 27.02	83 46 02.76	4.1424046	8.625

CAPULIN, CONEJOS COUNTY, COLO. (Not occupied.)

Station is cupola of large red, sheet-iron store building, on north side of road in town of Capulin.

[Latitude 37° 17′ 01.74″. Longitude 106° 06′ 37.56.″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Prospect	13 26 02	193 23 48	4.37100	14.600
Chiquita	122 20 02	302 15 10	4.14750	8.727
Sego	302 02 22	122 11 54	4.47820	18.687

CHIQUITA, CONEJOS COUNTY, COLO.

On top of Chiquita Peak, between Gata and Alamosa creeks, about 25 miles southwest of Alamosa. Foot of mountain can be reached by automobile from Alamosa up Alamosa Creek.

Station mark: Bronze tablet in rock flush with ground.

Signal: Centered over tablet, 2 by 4 inch scantling, nailed in cedar tree and supporting frame for cloth.

[Latitude 37° 21′ 05.13″. Longitude 106° 14′ 39.72″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Flat	40 17 05.00	220 07 02.77	4.5801081	23.630
Banded	51 12 48.72	230 58 56.02	4.6394950	27.092
Yellow Point	78 53 48	258 47 02	4.22479	10.427
Bennett	131 12 02.15	311 05 07.87	4.3475967	13.834
Alamosa	248 59 32.49	69 13 10.81	4.5497370	22.034
La Jara	289 12 16	109 22 33	4.42445	16.512
Sego	302 02 39.82	122 17 56.77	4.6445726	27.411
Capulin	302 15 10	122 20 02	4.14750	8.727
Prospect	348 00 07.09	168 02 45.05	4.4918336	19.283

CONEJOS COURTHOUSE, CONEJOS COUNTY, COLO. (Not occupied.)

Flagstaff and center of cupola of courthouse at Conejos.

[Latitude 37° 05′ 20.18″. Longitude 106° 01′ 13.10″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ortiz	1 59 05	181 58 57	3.99320	6.117
Prospect	84 50 19	264 44 50	4.13123	8.406
Sego	252 04 10	72 10 47	4.26433	11.420

EIGHT-MILE, CONEJOS COUNTY, COLO.

The eastern of two red-brick chimneys on hip-roofed house about 80 feet east of north and south road and about 8 miles west of Alamosa. The chimney was observed from Alamosa, and a three-point or resection station was made at house.

[Latitude 37° 29′ 05.45″. Longitude 106° 02′ 21.22′.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Prospect	14 37 59	194 33 10	4.66905	29.000
Alamosa	278 10 21	98 16 31	4.17921	9.390
Sego	333 23 39	153 31 31	4.63152	26.599

FLAT, CONEJOS COUNTY, COLO.

On highest part of ridge lying south of Elk Creek. To reach station take wagon road up Conejos River to mouth of Elk Creek. Another creek comes in from the southwest near this junction. Take the trail up east side of this creek and follow creek to its head at top of plateau.

Reference mark: Bronze tablet set in rock flush with ground.

Station mark: Stone monument of 10-foot base and 8 feet high. Azimuth from monument to tablet, 169°; distance, 8 feet.

[Latitude 37° 05′ 22.93″. Longitude 106° 31′ 15.33″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Banded	100 04 10.40	280 00 20.73	3.9799844	5.934
Summit	151 47 15.92	331 40 53.72	4.5171453	20.441
Bennett	190 00 20.72	10 03 30.82	4.6471110	27.572
Chiquita	220 07 02.77	40 17 05.00	4.5801081	23.630
Prospect	272 18 58.52	92 31 36.34	4.4923265	19.305

LA JARA, CONEJOS COUNTY, COLO. (Not occupied.)

Smokestack near elevator at La Jara. There is another stack at pumping station 0.25 mile north. From Alamosa the two stacks are nearly in line.

[Latitude 37° 16′ 20.38″. Longitude 105° 57′ 41.18″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Prospect	40 56 58	220 49 20	4.45552	17.736
Chiquita	109 22 33	289 12 16	4.42445	16.512
Alamosa	200 40 25	20 42 50	4.35981	14.228
Sego	320 11 39	140 15 46	4.28200	11.895

ORTIZ, CONEJOS COUNTY, COLO.

Tablet in malpais stone 1 foot by 18 inches in top measurement, flush with ground, 295 feet east of northernmost and upper one of eight juniper trees on edge of mesa overlooking San Antonio and town of Ortiz. Station is about 1.5 miles east of town of Ortiz.

Station mark: Sawed-lumber tripod signal erected over tablet.

[Latitude 37° 00′ 01.02″. Longitude 106° 01′ 26.89″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Big Horn	83 46 02.76	263 40 27.02	4.1424046	8.625
Prospect	123 17 01.72	303 11 41.47	4.1961570	9.761
Conejos Courthouse	181 58 57	1 59 05	3.99320	6.117
Sego	228 59 31.71	49 06 47.05	4.3732946	14.677

PAGOSA PEAK, MINERAL COUNTY, COLO.

Best reached from south and east by taking road from Pagosa Springs north 10 miles to Lloyd Clark ranch (formerly Cabe's), then proceeding on road 2 miles to sheep-dipping corral. From here a blazed trail leads north along creek for some distance to foot of two falls. Cross creek on snowslide line from southwest, ascend hill between falls, finally crossing at head of larger fall. Continue upstream 2 miles, and at upper end of large park turn south, keeping east of rocky ridges to good camp 1.5 miles northeast of peak. From here ascent is easy with animals.

Station mark: A bronze tablet cemented in rock on highest point of peak, over which is a cairn of 6 feet base and 8 feet high.

[Latitude 37° 26′ 38.61″. Longitude 107° 03′ 58.94″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Oakbrush (B)	4 15 18.88	184 14 26.21	4.4606272	.....
Piedra (B)	41 22 40.49	221 08 31.66	4.7191152	.....
Graham (B)	102 17 51.67	282 06 34.25	4.4470891	.....
Pyramid (B)	132 23 25.83	312 11 31.24	4.5898559	.....
South River (B)	207 31 27.76	27 34 34.55	4.2119146	.....
Belleview (B)	268 49 43.89	89 06 35.64	4.6118040	.....
Summit (B)	287, 25 44.64	107 39 13.60	4.5360494	.....
Summit (N)	287 25 35.25	107 39 04.10	4.5359741	21.346
Banded (N)	313 52 11.44	134 08 10.07	4.7341054	33.686

(B) Work done by H. L. Baldwin, jr., in 1906. (N) Work done by C. L. Nelson in 1919.

PROSPECT, CONEJOS COUNTY, COLO.

Northernmost of two peaks on Prospect Mountain, about 10 miles west of town of Conejos. Take road to Brown's ranch, thence trail to peak.

Station mark: Bronze triangulation tablet in rock flush with ground.

Signal: Quadripod of quaking-asp poles centered over tablet. Quadripod filled solid with branches.

[Latitude 37° 04′ 40.35″. Longitude 106° 10′ 18.55″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Big Horn	3 40 25.02	183 40 09.18	4.0064596	6.307
Flat	92 31 36.34	272 18 58.52	4.4923265	19.305
Bennett	152 46 41.86	332 37 10.65	4.7045632	31.471
Chiquita	168 02 45.05	348 00 07.09	4.4918336	19.283
Eight-mile	194 33 10	14 37 59	4.66905	29.000
Capulin	193 23 48	13 26 02	4.37100	14.600
Alamosa	211 47 41.14	31 58 38.74	4.7045559	31.471
La Jara	220 49 20	40 56 58	4.45552	17.736
Sego	257 23 04.00	77 35 40.49	4.5012232	19.705
Conejos Courthouse	264 44 50	84 50 19	4.13123	8.406
Ortiz	303 11 41.47	123 17 01.72	4.1961570	9.761

SEGO, CONEJOS COUNTY, COLO.

Top of highest of San Luis Hills, about 2 miles south of Sego ranch and about 4 miles east of Manassa.

Station mark: Bronze tablet in rock set flush with ground.

Signal: A 2 by 4 inch scantling nailed in top of cedar tree. Cedar branches bound around base of tree concentric with upright. Signal is southwest of tablet and 17.1 feet distant.

[Latitude 37° 08′ 23.19″. Longitude 105° 49′ 24.68″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ortiz	49 06 47.05	228 59 31.71	4.3732946	14.677
Big Horn	61 51 03.34	241 38 11.79	4.5551649	22.311
Conejos Courthouse	72 10 47	252 04 10	4.26433	11.420
Prospect	77 35 40.49	257 23 04.00	4.5012232	19.705
Capulin	122 11 54	302 02 22	4.47820	18.687
Chiquita	122 17 56.77	302 02 39.82	4.6445726	27.411
La Jara	140 15 46	320 11 39	4.28200	11.895
Eight-mile	153 31 31	333 23 39	4.63152	26.599
Alamosa	173 28 56.04	353 27 14.23	4.5607597	22.600

SOUTH RIVER, MINERAL COUNTY, COLO.

On the summit of South River Peak, at the head of Red Mountain Creek, which empties into Rio Grande about 12 miles southwest of Creede station. Point is on east side of east branch of creek. A road by Red Mountain Creek ends in a basin about 1 mile west of the peak. From the terminus of this road a trail leads across the divide and to Pagosa Springs.

Station mark: A bronze tablet cemented in rock, over which a cairn 3½ feet in diameter and 6 feet high was erected.

[Latitude 37° 34′ 27.08″. Longitude 106° 58′ 52.17″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Uncompahgre (Mc)	142 41 50.92	322 24 10.27	4.8424016	.....
Pyramid (Mc)	108 02 41.92	287 47 38.97	4.5811070	.....
Bristol (Mc)	165 05 40.79	345 02 58.99	4.4009798	.....
San Luis (Mc)	185 30 42.19	5 32 33.17	4.6629397	.....
Ouray (Mc)	214 58 56.69	35 26 54.26	5.0618017	.....
Pagosa (B)	27 34 34.55	207 31 27.76	4.2119146	.....
Graham (B)	76 22 58.54	256 08 33.20	4.5550681	.....
La Garita (B)	197 54 21.81	17 59 30.83	4.6031924	.....
Belleview (B)	292 14 20.07	112 28 06.51	4.5567810	.....
Summit (B)	314 27 34.07	134 37 57.63	4.5484071	.....
Del Norte (E)	267 10 06.59	87 25 24.82	4.5679884	22.979
Bennett (E)	281 35 42.09	101 55 42.71	4.6940039	30.715
Bennett (N)	281 35 43.77	101 55 44.19	4.6939384	30.711
Belleview (N)	292 14 23	112 28 08	4.55672	22.391
Summit (N)	314 27 41.73	134 38 05.17	4.5483331	21.963

(Mc) Work done by J. F. McBeth in 1904. (B) Work done by H. L. Baldwin, jr., in 1906. (E) Work done by J. R. Ellis in 1914. (N) Work done by C. L. Nelson in 1919.

SUMMIT, ARCHULETA AND CONEJOS COUNTIES, COLO.

The highest point on the portion of the Continental Divide forming the boundary line between Conejos and Archuleta counties. A fallen cairn, which marks position of triangulation station No. 3 of the Wheeler Survey, occupied September 2, 1874, as shown by a record found in the old cairn, stands about 10 feet west of station. It is about 4 miles south of abandoned town of Elmwood and easily reached by trail therefrom. After proceeding 1 mile take right-hand trail up Bear Gulch to head of creek, passing over divide and past peak 1 mile farther southwest and then ascending with horses the south slope to summit of mountain.

Station mark: An aluminum tablet set in solid rock, over which is a cairn with 5-foot base and 6 feet high.

[Latitude 37° 21′ 02.80″ (N); 02.69″ (B). Longitude 106° 41′ 47.19″ (N); 46.98″ (B).]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pagosa (B)	107 39 13.60	287 25 44.64	4.5360494	.....
South River (B)	134 37 57.63	314 27 34.07	4.5484071	.....
Belleview (B)	216 19 59.08	36 23 20.74	4.1390418	.....
Pagosa (N)	107 39 04.10	287 25 35.25	4.5359741	21.346
South River (N)	134 38 05.17	314 27 41.73	4.5483331	21.963
Belleview (N)	216 20 10	36 23 32	4.13900	8.558
Bennett (N)	237 35 09.47	57 44 44.06	4.4396680	17.101
Yellow Point (N)	277 35 02	97 44 45	4.37682	14.797
Flat (N)	331 40 53.72	151 47 15.92	4.5171453	20.441
Banded (N)	347 12 33.07	167 15 04.97	4.4471880	17.400

(B) Work done by H. L. Baldwin, jr., in 1906. (N) Work done by C. L. Nelson, in 1919.

YELLOW POINT, CONEJOS COUNTY, COLO. (Not occupied.)

A monument on bald part of hill between Chiquita and Summit.

[Latitude 37° 19′ 19.78″. Longitude 106° 25′ 48.48″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Summit	97 44 45	277 35 02	4.37682	14.797
Bennett	178 58 20	358 58 12	4.25282	11.122
Chiquita	258 47 02	78 53 48	4.22479	10.427

TEXAS.

TRIANGULATION STATIONS.

Alpine, Bone Spring, Bullis Gap, Cavins, Chisos Mountains, Dove Mountains, Hood Spring, Indian Wells, Longfellow, Marathon, Maravillas Canyon, and Sanderson quadrangles.

BREWSTER AND TERRELL COUNTIES.

During the summer of 1917 J. R. Ellis extended triangulation over the above-named quadrangles, based on stations Brown, Ord, and Sanderson of the U. S. Coast and Geodetic Survey, on North American datum.

For additional geographic positions in Texas see U. S. Geological Survey Bulletins 122, 181, 245, 276, 310, 440, 496, 551, and 644 and the 18th and 21st Annual Reports; also U. S. Coast and Geodetic Survey Reports for 1905 and 1911 and Special Publications Nos. 11, 17, and 54.

The U. S. Coast and Geodetic Survey and the Corps of Engineers, U. S. Army, have many unpublished positions.

BLACK HILLS, BREWSTER COUNTY, TEX. (Not occupied.)

Situated on highest point of westernmost butte of group known as the Black Hills, about 25 miles due east of Santiago Mountain and 10 miles northwest of Dove Mountain. Located from two points only.

Station mark: Tablet cemented in solid rock.

Signal: Cairn 5 feet in diameter at base and 6 feet in height, partly covered with white cloth.

[Latitude 29° 49′ 06.19″. Longitude 102° 59′ 28.53″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tres Hermanas	192 28 39	12 30 08	4.34356	13.702
Dove	296 58 47	117 03 06	4.19574	9.756

BLUFF, TERRELL COUNTY, TEX. (Not occupied.)

Situated on a high point on the bluffs about 5 miles north of Rio Grande and about 14 miles south of Dryden railroad station and post office. New road south from Dryden passes about 1 mile east of station.

Signal: Three soto bushes about 6 feet high, covered with white cloth and forming a tripod, which is supported at the base by a cairn 5 feet in diameter and 3 feet high.

[Latitude 29° 53′ 16.44″. Longitude 102° 06′ 44.26″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Indian Wells	101 30 15	281 20 56	4.48711	19.075
Twin	118 53 16	298 48 55	4.20414	9.942
Cactus	178 19 01	358 19 07	3.83110	4.212

BROWN, BREWSTER COUNTY, TEX.

A station of the U. S. Coast and Geodetic Survey on the southernmost and highest one of the Housetop Mountains, 4 miles northeast of Haymond railroad station, 2.5 miles southwest of Brown's goat ranch in Dry Valley, 10 feet from the sheer west face and 5 meters N. 24° E. from U. S. G. S. cairn.

Station mark: Coast and Geodetic Survey tablet in drill hole in boulder.

Reference mark: Coast and Geodetic Survey reference tablet 19.93 meters, true azimuth 218°, from station mark.

[Latitude 30° 09′ 16.766″. Longitude 102° 57′ 09.357″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Horse	49	34	50	229	29	53	4.31872	12.944
Santiago	51	44	11.58	231	30	17.55	4.7561994	35.445
Marathon	111	31	22	291	24	20	4.38205	14.976
Longfellow	258	48	18	78	58	25	4.51723	20.445
Feodora	275	08	15.24	95	26	19.56	4.7639371	36.082
Indian Wells	294	35	59.44	114	51	52.54	4.7492758	34.884
Bullis Gap	316	23	17.28	136	34	14.95	4.7094542	31.828
Tres Hermanas	356	14	04.71	176	14	24.09	4.1979228	9.801
Ord (C. & G. S.)	100	05	44.19	279	48	45.48	4.7403874	34.18
Nation (C. & G. S.)	177	41	51.52	357	41	30.79	4.4365518	16.97
Pyle (C. & G. S.)	229	09	59.90	49	18	26.69	4.5501692	22.06
Sanderson (C. & G. S.)	264	14	55.17	84	33	04.30	4.7652047	36.19
Dry (C. & G. S.)	267	12	27.69	87	17	57.24	4.2448541	10.92
New (C. & G. S.)	284	17	34.32	104	29	29.96	4.5958056	24.50
Road (C. & G. S.)	285	38	56.91	105	58	32.65	4.8149590	40.58

BULLIS GAP, BREWSTER COUNTY, TEX.

Situated on high part of ridge 1 mile south of Bullis Gap, 25 miles south and 4 miles east of Longfellow railroad station and post office. The Sanderson-Reagan Canyon wagon road passes through Bullis Gap.

Station mark: Aluminum tablet cemented in solid rock.

Signal: Cairn of 6-foot base and 7-foot height, centered over station mark and covered with white cloth.

[Latitude 29° 49′ 10.50″. Longitude 102° 35′ 13.52″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
River Peak	49	24	54	229	17	30	4.50081	19.686
Dove	73	55	44.09	253	47	59.87	4.4171171	16.235
Tres Hermanas	122	04	56.40	301	54	19.43	4.6063404	25.101
Brown	136	34	14.95	316	23	17.28	4.7094542	31.828
Indian Wells	229	04	00.45	49	08	53.18	4.3192626	12.960

CACTUS, TERRELL COUNTY, TEX.

Situated on a low hill about 9 miles south of Dryden railroad station and post office. To reach the station from Dryden, follow the new road south about 9 miles to crossroad (just south of the crossroad the new road begins the decent of a long hill) take road to right and follow west along ridge about 2 miles. Station stands 100 feet south of road.

Station mark: Stone post with drill hole in top.

Signal: An 11-foot sawed-lumber tripod centered over station mark.

[Latitude 29° 56′ 56.46″. Longitude 102° 06′ 51.76″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Twin	93	57	24	273	53	07	4.14117	8.600
Dryden	174	11	56	354	11	44	3.81252	4.035
Bluff	358	19	07	178	19	01	3.83110	4.212

DOVE MOUNTAIN, BREWSTER COUNTY, TEX.

Situated on highest point of middle one of three peaks forming Dove Mountain, about 24 miles south and 5 miles east of Tesnus railroad station and post office.

Station mark: Bronze tablet cemented in solid rock.

Signal: Cairn of 6-foot base and 7-foot height, centered over station mark and covered with white cloth.

[Latitude 29° 45′ 14.66″. Longitude 102° 50′ 47.99″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Rosi las	57	15	49	237	04	05	4.65881	28.324
South Pass	80	39	44	260	28	38	4.56315	22.725
Santiago	99	24	51.84	279	07	53.38	4.7464586	34.658
Black Hills	117	03	06	296	58	47	4.19574	9.752
Tres Hermanas	162	14	11.21	342	11	20.46	4.4786186	18.705
Bullis Gap	253	47	59.87	73	55	44.09	4.4171171	16.235
River Peak	355	23	47	175	24	07	4.12773	8.338

DRYDEN, TERRELL COUNTY, TEX.

Situated on a low ridge 3 miles south of Dryden railroad station and post office. To reach station from Dryden follow new road south about 2.5 miles to point where road crosses ridge, thence follow west along ridge 0.75 mile to station; 21 feet west to north and south wire fence; 5.166 feet north to T fence.

Signal: A 12-foot lumber tripod centered over station mark.

Station mark: Stone post 4 by 8 by 18 inches, with hole drilled in top, set 14 inches in ground.

[Latitude 30° 00′ 26.29″. Longitude 102° 07′ 16.25″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Twin	67	16	51.62	247	12	46.51	4.1540515	8.859
Feodora	116	15	54.08	296	08	56.89	4.3956546	15.453
Sanderson	134	54	27.12	314	47	32.46	4.4944231	19.399
Dryden West Pump Tower	190	38	35	10	38	46	3.64105	2.719
Juniper	195	20	45	15	22	00	4.17738	9.348
Windmill	241	35	50	61	38	01	3.90026	4.939
Cactus	354	11	44	174	11	56	3.81252	4.035

DRYDEN WEST PUMP TOWER, TERRELL COUNTY, TEX. (Not occupied.)

Station mark: Center of tower 2.7 miles nearly north of Dryden.

[Latitude 30° 02′ 45.97″. Longitude 102° 06′ 46.08″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Dryden	10	38	46	190	38	35	3.64105	2.719
Feodora	106	10	52	286	03	39	4.38134	14.952
Sanderson	127	44	34	307	37	24	4.46213	18.009

FEODORA, TERRELL COUNTY, TEX.

Situated on high flat-topped hill 3.25 miles southeast of Sanderson and about 1 mile northeast of Southern Pacific R. R. Station is on highest part of hill and 510 feet east of rim rocks on west end of hill, which faces the Southern Pacific R. R. tracks.

Station mark: Aluminum tablet cemented in solid rock.

POLITECHNIKA GDAŃSKA ZAKŁAD GEOLOGII

Signal: A 12-foot sawed-lumber tripod, centered over tablet and covered with white cloth.

[Latitude 30° 06′ 22.96″. Longitude 102° 21′ 09.21″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Indian Wells	20 47 25.39	200 45 16.93	4.2877370	12.053
Peak	74 24 25	254 09 29	4.69749	30.693
Tres Hermanas	79 47 20.09	259 29 37.44	4.7616903	35.896
Brown	95 26 19.56	275 08 15.24	4.7639371	36.082
Sanderson	180 52 18.48	0 52 21.64	4.0428240	6.858
Dryden West Pump Tower	286 03 39	106 10 52	4.38134	14.952
Dryden	296 08 56.89	116 15 54.08	4.3956546	15.453
Twin	330 53 29.38	150 56 20.78	4.2759375	11.730

GARDEN SPRINGS, BREWSTER COUNTY, TEX. (Not occupied.)

Sighted from two points only.

[Latitude 30° 04′ 33.78″. Longitude 103° 17′ 01.50″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Santiago	25 35 17	205 31 19	4.47126	18.391
Ord	129 19 00	309 12 01	4.45930	17.892

INDIAN WELLS, TERRELL COUNTY, TEX.

Situated on a low bluff facing northwest, about 1 mile northeast of Indian Wells and about 16 miles south of Sanderson. Sanderson-Indian Wells wagon road passes one-third of a mile west of station. A dim road forks from main road and passes 300 feet west of station.

Station mark: A bronze tablet cemented in solid rock 1 foot below surface, over which a stone post 4 by 6 by 24 inches is centered. Post projects 1 foot above surface. A cross and U. S. G. S. is chiseled in top of post.

Signal: A 13-foot lumber tripod centered over station mark and covered with white cloth.

[Latitude 29° 56′ 33.96″. Longitude 102° 25′ 25.94″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Bullis Gap	49 08 53.18	229 04 00.45	4.192656	12.960
Peak	96 32 29	276 19 41	4.61682	25.714
Tres Hermanas	98 56 25.09	278 40 53.34	4.7040468	31.434
Brown	114 51 52.54	294 35 59.44	4.7492758	34.884
Feodora	200 45 16.93	20 47 25.39	4.2877370	12.053
Twin	264 07 58.62	84 12 57.77	4.2082175	10.036
Bluff	281 20 56	101 30 15	4.48711	19.075

JUNIPER, TERRELL COUNTY, TEX.

Situated on east and west ridge, 8 miles due north of Dryden railroad station. The Dryden-Sheffield wagon road passes about 700 feet east of station; 22 feet southwest of station to center of juniper bush, 1,140 feet southeast of station to center of small conical hill.

Signal: A 12-foot sawed-lumber tripod centered over tablet.

Station mark: Bronze tablet cemented in solid rock.

[Latitude 30° 08′ 17.44″. Longitude 102° 04′ 47.51″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Dryden	15 22 00	195 20 45	4.17738	9.348
Sanderson	106 07 17	285 59 07	4.43389	16.875
Windmill	344 20 55	164 21 51	4.04695	6.923

LONGFELLOW, PECOS COUNTY, TEX. (Not occupied.)

Situated on a high hill on the Downey ranch, about 5 miles due north of Longfellow railroad station and post office. The Longfellow-Downey ranch wagon road passes about two-thirds of a mile east of the station.

Station mark: Tablet cemented in solid rock.

Signal: Cairn of 6-foot base and 7-foot height, covered with white cloth and centered over tablet.

[Latitude 30° 12′ 42.67″. Longitude 102° 37′ 02.55″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tres Hermanas	54 51 34	234 41 48	4.58301	23.788
Brown	78 58 25	258 48 18	4.51723	20.445
Sanderson	271 24 23	91 31 57	4.40965	15.959

MARATHON, BREWSTER COUNTY, TEX. (Not occupied.)

Situated on a small butte, about 3½ miles east and 2 miles north of Marathon railroad station and post office.

Signal: White flag attached to a 6-foot scantling, around the base of which was built a cairn.

[Latitude 30° 14′ 03.18″. Longitude 103° 11′ 07.86″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log meters.*	*Miles.*
Ord	91 19 07	271 09 11	4.50155	19.720
Brown	291 24 20	111 31 22	4.38205	14.976
Tres Hermanas	316 13 25	136 20 45	4.53119	21.113

ORD, BREWSTER COUNTY, TEX.

A station of the U. S. Geological Survey located in 1884, occupied in 1892, and relocated by the U. S. Coast and Geodetic Survey in 1917. On highest point of Mount Ord, 12 miles southeast of Alpine and 2 miles east of Alpine-Terlingua road.

Station mark: Triangle and letters "U. S." cut in a flat rock flush with ground, near center of ridge.

Reference mark: Old U. S. Geological Survey cairn; azimuth 337° 07′, distance 16.4 meters, from station mark.

[Latitude 30° 14′ 25.542″. Longitude 103° 30′ 54.67″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Flat	173 04 51	353 03 53	4.40571	15.815
Gillion	226 36 17	46 42 42	4.44781	17.424
Leonard	250 58 09	71 06 55	4.45900	17.879
Marathon	271 09 11	91 19 07	4.50155	19.720
Tres Hermanas	294 24 54.34	114 42 10.29	4.7835027	37.744
Horse	300 52 09	121 04 09	4.65081	27.807
Garden Springs	309 12 01	129 19 00	4.45930	17.892
Santiago	347 57 19.77	168 00 18.48	4.6621042	28.540
Baldy (C. & G. S.)	124 52 19.22	304 32 18.58	4.8860644	47.80
Star (C. & G. S.)	155 50 37.83	335 42 07.80	4.8147855	40.56
Beard (C. & G. S.)	179 35 23.42	359 35 14.51	4.8137612	40.47
Chancellor (C. & G. S.)	219 27 56.62	39 41 00.25	4.8110102	40.22
Nation (C. & G. S.)	251 18 17.17	71 34 58.88	4.7475357	34.74
Brown (C. & G. S.)	279 48 45.48	100 05 44.19	4.7403874	34.18

PEAK, BREWSTER COUNTY, TEX. (Not occupied.)

A sharp peak on the north end of a high butte, which lies about 5 miles east and 1 mile south of Tres Hermanas Mountain.

[Latitude 29° 59′ 04.58″. Longitude 102° 50′ 59.64″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tres Hermanas	109 20 46	289 18 04	3.97314	5.841
Feodora	254 09 29	74 24 25	4.69749	30.963
Indian Wells	276 19 41	96 32 29	4.61682	25.714

RIVER PEAK, BREWSTER COUNTY, TEX. (Not occupied.)

The center of a cone-shaped peak near the Rio Grande, about 7.5 miles due south of Dove Mountain.

[Latitude 20° 38′ 00.24″. Longitude 102° 50′ 07.96″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Tres Hermanas	166 17 37	346 14 26	4.63628	26.892
Dove	175 24 07	355 23 47	4.12773	8.338
Bullis Gap	229 17 30	49 24 54	4.50081	19.686

ROSILLOS, BREWSTER COUNTY, TEX. (Not occupied).

About 70 miles south of Marathon and 20 miles north of Boquillas. About 4 miles west of the Marathon and Boquillas road, on highest peak in the range. Sighted from two points only.

Station mark: A bronze triangulation tablet cemented in solid rock under center of a cairn 8 feet high.

[Latitude 29° 31′ 51.94″. Longitude 103° 14′ 31.92″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Santiago	153 30 53	333 25 43	4.57599	23.407
Dove	237 04 05	57 15 49	4.65881	28.324

SANDERSON, TERRELL COUNTY, TEX.

A station of the U. S. Coast and Geodetic Survey on highest point of mountain 4 miles northeast of Sanderson, 1 mile east from the first summit of the by-road which leads northeast from Sanderson-Sheffield wagon road, 2.5 miles from Sanderson. Station is 1 mile from top of ridge and on highest point in this vicinity.

Station mark: Identical with U. S. Geological Survey mark, a tablet in top of stone post.

Reference marks: (1) Azimuth 217° 51′, distance 34.05 meters; (2) azimuth 312° 35′, distance 28.75 meters; (3) azimuth 22° 47′, distance 37.70 meters.

[Latitude 30° 12′ 21.331″. Longitude 102° 21′ 02.932″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Feodora	0	52	21.64	180	52	18.48	4.0428240	6.858
Tres Hermanas	69	32	22.18	249	14	34.79	4.7843411	37.817
Longfellow	91	31	57	271	24	23	4.40965	15.959
Juniper	285	59	07	106	07	17	4.43389	16.875
Dryden West Pump Tower	307	37	24	127	44	34	4.46213	18.009
Dryden	314	47	32.46	134	54	27.12	4.4944231	19.399
Twin	341	52	03.72	161	54	52.23	4.4618980	17.999
Russell	184	50	11.36	4	50	36.46	4.1978092	9.798
King	248	01	10.71	68	07	31.14	4.3378546	13.527
New (C. & G. S.)	52	02	00.46	231	55	48.97	4.4003477	15.62
Dry (C. & G. S.)	83	16	26.20	263	03	46.76	4.6095729	25.29
Pyle (C. & G. S.)	119	30	00.09	299	20	14.73	4.5516103	22.13
Hen (C. & G. S.)	293	14	54.43	113	21	57.14	4.3893883	15.23
Eldredge (C. & G. S.)	320	58	32.83	141	04	05.89	4.4512005	17.56

SANTIAGO, BREWSTER COUNTY, TEX.

On highest point of Santiago Mountain, about 18 miles a little north of east from Mr. Collin's ranch.

Station mark: Cross mark on a small post set in the earth under center of a cairn 10 feet high.

Reference marks: Bronze tablet cemented in solid rock under the cairn and bearing from station mark N. 30° W., distance 1.6 feet; cross mark and the letters "U. S." cut deep in the rock and bearing from station mark S. 22° 59′ W., distance 15.3 feet.

[Latitude 29° 50′ 06.57″. Longitude 103° 24′ 57.66″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Ord	168	00	18.48	347	57	19.77	4.6621042	28.540
Garden Springs	205	31	19	25	35	17	4.47126	18.391
Brown	231	30	17.55	51	44	11.58	4.7561994	35.445
Tres Hermanas	246	37	32.87	66	51	44.39	4.6975279	30.965
Dove	279	07	53.38	99	24	51.84	4.7464586	34.658
South Pass	308	10	59	128	16	48	4.38387	15.039
Rosillos	333	25	43	153	30	53	4.57599	23.407

SOUTH PASS, BREWSTER COUNTY, TEX. (Not occupied.)

Situated on high point of north and south ridge, about 4 miles north of South Pass.

Signal: Quadripod of poles covered with white cloth and anchored at the base with rock.

[Latitude 29° 42′ 00.05″. Longitude 103° 13′ 10.42″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Santiago	128	16	48	308	10	59	4.38387	15.039
Tres Hermanas	217	40	46	37	49	04	4.64178	27.235
Dove	260	28	38	80	39	44	4.56315	22.725

STILLWELL, BREWSTER COUNTY, TEX. (Not occupied.)

About 14 miles east and a little north of Marathon, beyond the old, lower pump in Center schoolhouse, 2 miles northeast of Yarbro's ranch, 1 mile north of Mathews's ranch, on the highest point of a low ridge running north and south, and just east of and below Cedar Mountains. An old road runs from Mathews's ranch to the foot of the hill.

Station mark: Bronze tablet in outcrop of ledge.

Signal: Small lumber quadripod covered with white cloth and centered over station.

[Latitude 30° 16′ 17.52″. Longitude 103° 01′ 28.32″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Horse	18 36 04	198 34 00	4.44614	17.358
Leonard	106 29 48	286 23 31	4.31901	12.953
Nation	202 03 46	22 05 36	4.18982	9.620

TRES HERMANAS, BREWSTER COUNTY, TEX.

Situated on the middle and highest one of three peaks known as the Three Sisters, which are located about 7 miles due south of Tesnus railroad station and post office.

Station mark: Stone post 6 by 8 by 24 inches, with hole drilled in top, set 15 inches in ground.

Signal: Cairn of 7-foot base and 7-foot height, centered over station mark.

[Latitude 30° 00′ 45.61″. Longitude 102° 56′ 30.70″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Black Hills	12 30 08	192 28 39	4.34356	13.706
South Pass	37 49 04	217 40 46	4.64178	27.235
Santiago	66 51 44.39	246 37 32.87	4.6975279	30.965
Horse	97 31 59	277 26 44	4.23152	10.589
Ord	114 42 10.29	294 24 54.34	4.7835027	37.744
Marathon	136 20 45	316 13 25	4.53119	21.113
Brown	176 14 24.09	356 14 04.71	4.1979228	9.801
Longfellow	234 41 48	54 51 34	4.58301	23.788
Sanderson	249 14 34.79	69 32 22.18	4.7843411	37.817
Feodora	259 29 37.44	79 47 20.09	4.7616903	35.896
Indian Wells	278 40 53.34	98 56 25.09	4.7040468	31.434
Peak	289 18 04	109 20 46	3.97314	5.841
Bullis Gap	301 54 19.43	122 04 56.40	4.6063404	25.101
Dove	342 11 20.46	162 14 11.21	4.4786186	18.705
River Peak	346 14 26	166 17 37	4.63628	26.892

TWIN, TERRELL COUNTY, TEX.

Situated near center of northwest and smaller of two buttes 11 miles southwest of Dryden railroad station and 7 miles south and 2 miles west of Eldridge railroad station.

Station mark: Aluminum tablet cemented in solid rock.

Signal: A 12-foot sawed-lumber tripod centered over tablet; sides of signal are covered with white cloth.

[Latitude 29° 57′ 27.20″. Longitude 102° 15′ 26.73″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Indian Wells	84 12 57.77	264 07 58.62	4.2082175	10.036
Feodora	150 56 20.78	330 53 29.38	4.2759375	11.730
Sanderson	161 54 52.23	314 52 03.72	4.4618980	17.999
Dryden	247 12 46.51	67 16 51.62	4.1540515	8.859
Cactus	273 53 07	93 57 24	4.14117	8.600
Bluff	298 48 55	118 53 16	4.20414	9.942

WINDMILL, BREWSTER COUNTY, TEX. (Not occupied.)

Sighted from two points only.

[Latitude 30° 02′ 29.00″. Longitude 102° 02′ 55.31″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Dryden	61 38 01	241 35 50	3.90026	4.939
Juniper	164 21 51	344 20 55	4.04695	6.923

Alpine, Buck Hill, Chisos Mountains, Hood Springs, Jordan Gap, Nine Point Mesa, and Santiago Peak 15′ quadrangles.

BREWSTER COUNTY.

Secondary triangulation by C. G. Anderson in 1917, based on Santiago, Hen Egg, and San Jacinto stations of the U. S. Geological Survey, on approximate North American datum.

BLACK CAP, BREWSTER COUNTY, TEX.

On a sharp black peak 2 miles south of Santiago Draw and 10 miles east of Alpine-Terlingua road.

Station mark: Bronze tablet set at highest point of hill.

Signal: A cairn.

[Latitude 29° 43′ 18.9″. Longitude 103° 22′ 35.9″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Buck	102 29 24	282 22 18	4.35703	14.138
Santiago		343 06 35	4.11783	8.150

BUCK, BREWSTER COUNTY, TEX.

On south edge of a low, flat hill, locally known as Buck Hill, 2 miles west of the Alpine-Terlingua road.

Station mark: Bronze tablet set in the highest boulder on the hill.

[Latitude 29° 45′ 57.9″. Longitude 103° 36′ 22.8″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Santiago	247 21 30	67 27 10	4.29948	12.383
Hen Egg	357 24 17	177 24 44	4.51096	20.152

DEL NORTE, BREWSTER COUNTY, TEX.

On a sharp peak 2 miles south of Del Norte Gap.

Station mark: Bronze tablet.

Signal: Rock monument.

[Latitude 29° 58′ 53.7″. Longitude 103° 25′ 38.6″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Elephant	106 42 15	286 39 08	4.02081	6.519
Santiago	356 07 25	176 07 45	4.21129	10.107

DOME, BREWSTER COUNTY, TEX.

On a hill known as Round Up Hill, 5 miles west of Kohernit's ranch.
Station mark: Bronze tablet.
Signal: Brush 4 feet north of tablet.

[Latitude 29° 58′ 29.8″. Longitude 103° 38′ 20.5″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Buck	.. .. ..	172 14 15	4.36861	14.520
Santiago	.. .. ..	125 47 16	4.42379	16.487

ELEPHANT, BREWSTER COUNTY, TEX.

On south edge of Elephant Mountains, 2 miles northeast of Kohernit's ranch.
Station mark: Bronze tablet.
Signal: Rock monument.

[Latitude 30° 00′ 31.4″. Longitude 103° 31′ 53.6″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
San Jacinto	55 29 03	235 16 24	4.69630	30.878
Santiago	329 51 56	149 55 23	4.34715	13.820

LA NEGRA, BREWSTER COUNTY, TEX.

On sharp black peak in flat, 1 mile east of Alpine-Terlingua road, 1 mile north of road to Henderson's ranch.
Station mark: Bronze tablet set at highest point of hill.
Signal: Rock monument.

[Latitude 29° 37′ 38.9″. Longitude 103° 31′ 02.2″.

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
San Jacinto	108 26 00	288 13 00	4.64949	27.723
Santiago	203 01 32	23 04 33	4.39826	15.546

LAVA, BREWSTER COUNTY, TEX.

On a lava cone 2 miles east of Marathon-Boquillas road and 12 miles south of Annal's ranch.
Station mark: Bronze tablet.
Signal: Rock monument.

[Latitude 29° 52′ 24.7″. Longitude 103° 14′ 23.9″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Santiago	76 00 24	255 55 09	4.24388	10.895
Elephant	118 06 16	297 57 32	4.50366	19.816

MITCHELL, BREWSTER COUNTY, TEX.

On south edge of Mitchell Mesa 2 miles west of Grab Creek.

Station mark: Bronze tablet set under rock monument. Another tablet set 4 feet northwest stamped "5351."

[Latitude 29° 58′ 32.4″. Longitude 103° 43′ 51.1″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Turney	18 24 47	198 23 21	4.16484	9.082
Buck	332 35 32	152 39 15	4.41768	16.257

SHARP ROCK, BREWSTER COUNTY, TEX. (Not occupied.)

A very sharp rock 200 or 300 feet south of the south edge of mesa and about same elevation. Sighted from two points only.

[Latitude 29° 57′ 57.0″. Longitude 103° 52′ 50.1″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Turney	.. .. ..	142 24 39	4.20765	10.023
Mitchell	.. .. ..	85 43 05	4.16111	9.004

SHARP WHITE PEAK, BREWSTER COUNTY, TEX. (Not occupied.)

A sharp white peak on ridge half way between Del Norte and Santiago, being the middle and highest of three peaks on a prominent summit. Sighted from two points only.

[Latitude 29° 53′ 49.9″. Longitude 103° 24′ 16.1″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Elephant	.. .. ..	315 11 54	4.24095	10.822
Buck	.. .. ..	233 15 56	4.38604	15.114

TURNEY, BREWSTER COUNTY, TEX.

On summit of gray peak on white ridge 2 miles west of the 0–2 ranch. Other peaks to north are slightly higher.

Station mark. Bronze tablet on highest point of peak.

Signal: Rock monument.

[Latitude 29° 51′ 02.0″. Longitude 103° 46′ 43.1″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
San Jacinto	57 54 54	237 49 39	4.30359	12.501
Buck	299 17 53	119 23 08	4.28124	11.874

WHITE ENDS, BREWSTER COUNTY, TEX. (Not occupied.)

A prominent peak on ridge southeast of Santiago and 4 miles northeast of Black Cap. Peak has noticeable white spots on northwest and southeast sides.

Signal: Highest point of mountain.

[Latitude 29° 45′ 15.0″. Longitude 103° 18′ 34.0″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Buck	92 42 19	272 33 30	4.45844	17.856
Carazones	21 39 14	201 35 42	4.49558	19.450

WILSON WINDMILL, BREWSTER COUNTY, TEX. (Not occupied.)

A windmill on Wilson's ranch.

[Latitude 29° 47′ 13.7″. Longitude 103° 44′ 08.7″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Turney	.. .. ..	329 27 09	3.91175	5.071
Buck	.. .. ..	100 36 00	4.10486	7.910

Crane, Fort Stockton, Free, Longfellow, Marathon, Monument Springs, Sanderson, Sawyer, Sherwood, and Stiles quadrangles.

BREWSTER, IRION, PECOS, REAGAN, TERRELL, AND UPTON COUNTIES.

During 1919 and 1920 triangulation was extended over the above-named quadrangles by R. M. Wilson, R. B. Steele, and B. H. Yoakum. Starting from stations Chancellor, Madera, Hen, and Sanderson of the U. S. Coast and Geodetic Survey, North American datum, the work was carried north and east and connected with U. S. Geological Survey stations Bolt, Lopez, and Funk, the positions of which on Cisco datum, are published on pages 223 and 224, Bulletin 122.

ARBUCKLE, PECOS COUNTY, TEX.

About 25 miles north of Marathon, on road running past Iron Mountains, north down Gillion Canyon, and crossing low divide into "Draw No. 3" past Elmer Taylor's house. Station is about 2 miles south and a little west of Elmer Taylor's house, about 0.50 mile southwest of Arbuckle Tank, on a mesa just west of the road. The mesa is in the foothills and overlooks the valley on the northwest. The point is about 100 yards west of the highest point of the mesa.

Station mark: Bronze tablet in solid rock.

Signal: Cairn topped by a branch of cedar, the whole about 10 feet high and centered over station.

[Latitude 30° 31′ 46.08″. Longitude 103° 11′ 41.24″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chancellor	210 18 57	30 22 17	4.31542	12.846
Madera	255 23 36	75 32 12	4.44583	17.345
Glass	316 48 01	136 51 44	4.24405	10.899

BAKER, PECOS COUNTY, TEX.

About 30 miles by road southeast of Girvin, toward Sheffield, and about 2 miles east of Baker's headquarters ranch. The station is on a small round knob, about 0.25 miles east of the point where the road from Baker's ranch to Pouton Crossing on the river crosses the divide. The station is visible from the ranch.

Station mark: An aluminum tablet set in solid rock about 10 inches below the surface of the ground, surmounted by a pointed rock projecting above the surface.

Signal: Cairn about 7 feet high, standing northwest of the station, azimuth 140° 24′, distance 7.6 feet.

[Latitude 30° 52′ 52.79″. Longitude 102° 03′ 51.11″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Corner	69	47	34.52	249	41	03.32	4.3346478	13.428
Sherbina	80	26	55	260	20	17	4.31730	12.902
Indian	115	37	59.98	295	34	28.19	4.0843183	7.545
Pecos	166	47	20.00	346	45	32.77	4.3829782	15.008
Murphy	227	33	06.05	47	37	59.21	4.3116886	12.736

BARNHART, IRION COUNTY, TEX.

About 4.5 miles southeast of Barnhart and 1.2 miles east of Barnhart-Ozona road, on top of flat ridge in Blackstone & Slaughter pasture, S. 38° 30′ E. about 1 mile from windmill and tank.

Signal: 2 by 4 inch scantling with 3-foot cross targets, centered over station mark and guyed with wire.

Station mark: Aluminum tablet in top of stone set in place and referenced as follows: Stone marked 1+ is S. 73° 30′ W., 21.70 feet distant; stone marked 2+ is S. 50° 45′ E., 20.98 feet distant; stone marked 3+ is N., 22° 00′ E., 20.83 feet distant.

Instrument on center.

[Latitude 31° 04′ 11.80″. Longitude 101° 09′ 02.72″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Nine-Mile	40	50	21.10	220	48	27.81	3.9500161	5.538
Owens	100	18	45.69	280	15	43.24	3.9787497	5.917
Hobbs	175	37	52	355	37	36	4.02876	6.639
Monte	202	13	47.73	22	15	32.06	4.1499645	8.776
Nouges	287	48	41.05	107	53	22.02	4.1811351	9.429

BAR S, REAGAN COUNTY, TEX.

Is 13.0 miles northwest of Barnhart, 3.5 miles southwest of Bar S headquarters ranch house, 1.75 miles north of road from Bar S ranch to Big Lake. On northern edge of mesa overlooking Concho Valley.

Signal: 4 by 4 inch scantling with cross targets centered over station mark and guyed with wire.

Station mark: Aluminum tablet in top of stone set in place and referenced as follows: Rock marked + is 32.31 feet distant; rock marked+ is 33.05 feet distant.

Instrument elevated 8 feet and on center.

[Latitude 31° 15′ 50.01″. Longitude 101° 18′ 08.79″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Cox	31	43	17.73	211	40	38.89	4.1888021	9.597
Japson	98	20	48.32	278	13	07.86	4.3748626	14.730
Concho	153	31	01.39	333	28	04.56	4.3038976	12.510
Sawyer	193	02	14.97	13	03	16.46	4.1415669	8.608
Ketchum	247	10	09.07	67	18	02.56	4.4171336	16.236
Monte	293	00	47.63	113	07	15.35	4.3327271	13.368
Owens	345	32	29.87	165	34	09.58	4.3106586	12.706

BELDING, PECOS COUNTY, TEX. (Not occupied.)

Is 12 miles southwest of Fort Stockton, 2 miles southeast of Belding, on the Kansas City, Mexico & Orient R. R. The point is on the southeast corner of a high mesa and commands a view east and south from about N. 30° E. to about S. 80° W., the rest of the horizon being obscured by the flat top of the mesa.

Station mark: Drill hole in center of a triangle cut in the outcrop of solid rock.

Signal: Cairn about 7 feet high, centered over the station.

[Latitude 30° 45′ 44.96″. Longitude 102° 59′ 25.24″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Chancellor	48 53 30	228 50 34	4.08451	7.548
Three-Mile	238 01 07	58 06 39	4.30566	12.561
Madera	338 31 45	158 34 07	4.30596	12.569

BIG LAKE, REAGAN COUNTY, TEX.

In the town of Big Lake, at the southeast corner of the large brick school building.

Station mark and signal: A flag pole standing 1 foot diagonally out from the southeast corner of the schoolhouse with its top about 8 feet above the roof of the building.

[Latitude 31° 11′ 41.43″. Longitude 101° 27′ 47.60″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Carroll	15 04 39	195 07 23	3.92395	5.216
Low	92 05 39	271 59 06	4.30301	12.484
Japson	143 39 27	323 36 47	4.13824	8.543
Cox	307 14 59	127 17 19	3.95707	5.629

BLACKSTONE, TERRELL OR PECOS COUNTY, TEX.

About 10 miles southwest of Sheffield post office, 4 miles south of Blackstone & Slaughter's headquarters ranch, 4 miles north of "South Camp," Blackstone & Slaughter's old headquarters, 8 miles northeast of Carruther's place, in Independence Draw, 2 miles southeast of Blackstone & Slaughter's "North well" in Surveyors' Canyon, 2 miles east of Sanderson-Sheffield road, which is in Surveyors' Canyon at this point, on highest point of dividing mesa, and 300 yards east of a north-south fence line.

Station is best reached from the west by taking road leading off from Sanderson-Sheffield road in Surveyors' Canyon, following this road east by "North well," thence east and south up canyon to divide, thence northeast through fence line to station.

Station mark: Bronze tablet cemented in rock set flush with ground.

Signal: Quadripod of lumber covered with black and white cloth, and bearing a white flag. Signal centered over station mark.

[Latitude 30° 38′ 56.90″. Longitude 101° 57′ 48.56″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mitchell	25 45 20.06	205 42 44.83	4.2725376	11.638
Corder	54 52 58.75	234 44 54.85	4.4916887	19.277
Independence	68 08 43	248 06 28	3.88482	4.766
Windmill	96 56 47.13	276 49 52.59	4.3384336	13.545
Cedar	123 12 03.29	303 05 37.64	4.3802250	14.913
Slaughter	141 06 36.67	321 04 50.84	3.9440184	5.462
Oil Derrick	301 00 35	121 05 30	4.25512	11.181

BOLT, IRION COUNTY, TEX.

Description from Bulletin 122, page 224, as follows:

In Irion County, on northeast end of high flat ridge between Dove and Spring creeks, about 8 miles, W. S. about 20°, from spring at head of Dove Creek and about 3.5 miles north of line between Irion and Schleicher counties.

Signal: Piece of scantling bolted to stump of mesquite tree, stone marked $\frac{U}{G}+\frac{S}{S}$ is 4 feet S. 65° 53′ E., from center of station.

From the above description could not locate stone marked $\frac{U}{G}+\frac{S}{S}$ but found stump of mesquite tree through which a hole had been bored and a 1 by 12 inch bolt inserted, showing evidence of having been placed there several years before.

Mr. Fayette Tankersly, a resident of this part of the State for 30 years, states that this stump had the signal bolted to it when the engineers were working this territory 20 years ago, and that it was the only signal the engineers had in this vicinity.

Description of new station:

In Irion County, about 6 miles east of Monument, and about 2.5 miles southeast of W. P. Teal's ranch home, on northeast end of high ridge, between Dove and Spring creeks.

Signal: A 2 by 4 scantling with cross targets, centered over station and guyed with wire.

Station mark: Aluminum tablet cemented in stone and referenced as follows: Rock marked 1+ is 24.87 feet distant, 316° 45′ magnetic azimuths; rock marked +- is 20.09 feet distant, 95° 40′; rock marked 3+ is 23.84 feet distant, 195° 10′.

[Latitude 31° 08′ 11.59″. Longitude 100° 50′ 52.89″. Cisco datum, Bull. 122, latitude 31° 08′ 19.11″; longitude 100° 50′ 47.98″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Monument	45	51	01.17	225	49	20.33	3.8578300	4.479
Monte	103	39	38.25	283	31	58.73	4.3837553	15.035
Suggs	138	33	25.08	318	29	27.55	4.2631553	11.390
Lopez	178	54	25.79	358	54	17.25	4.3585343	14.187
Lopez (Cisco datum)	178	54	29.61	358	54	21.07	4.3584995	14.186

BROWN (2), TERRELL COUNTY, TEX.

About 30 miles north along Sheffield road from Dryden, 4 miles east from Brown's headquarters ranch in Big Canyon, 2 miles northeast from Brown's No. 2 well in Big Canyon, 1.5 miles west from Scott's well on mesa, 3 miles west from Dryden-Sheffield road, on high point of mesa which is divide between Big Canyon and Dry Creek drainage, near south end of highest part of mesa, 800 feet west of gate on road leading from Brown's ranch to Scott's ranch.

Station mark: Standard bronze tablet cemented in drill hole in solid outcropping rock.

Signal: A 2 by 4 scantling, 14 feet high, with cross targets of white and black cloth and braced with four guy wires, centered over station mark.

[Latitude 30° 21′ 50.69″. Longitude 101° 59′ 27.30″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
King	56	57	33.28	236	53	00.50	4.2362009	10.704
Center	123	19	09.39	303	15	22.96	4.1550102	8.879
Mitchell	159	30	20.98	339	28	36.42	4.1966017	9.771
Oil Derrick	218	56	48	39	02	34	4.45816	17.845

CARROLL, REAGAN COUNTY, TEX.

Is 7 miles south and a little west of Big Lake and 0.5 mile southeast of the Big Lake-Sheffield road. The station is on the north part of the top of a gradual rise and is 0.75 mile southeast of a gate through which the above-mentioned road passes as it comes up on the mesa from the draw. Carroll's ranch lies about 3 miles east and a little north from the station. A small pile of rocks is centered over the tablet.

Station mark: An aluminum tablet cemented in a boulder set flush with ground.

Signal: A 12-foot 2 by 4 scantling, bearing cross targets, guyed with wire, and centered over the station.

[Latitude 31° 07′ 18.66″. Longitude 101° 29′ 09.61″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Big Lake	195 07 23	15 04 39	3.92395	5.216
Cox	254 27 10	74 30 13	3.98856	6.052
Last	282 42 30	102 46 11	4.06543	7.224

CASTLE, BREWSTER COUNTY, TEX. (Not occupied.)

About 10 miles northwest of Marathon, on Cathedral Mountain. The highest point of a rather blunt pinnacle of rock approximately 50 feet in diameter near the top, standing as a continuation of the east end of the rock cliff that forms the south side of the top of Cathedral Mountain. The point is not as high as the top of Cathedral Mountain.

Station mark and signal: Highest point of rock.

[Latitude 30° 18′ 32.38″. Longitude 103° 20′ 47.10″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Nation	254 24 23	74 35 59	4.58152	23.707
Horse	324 07 46	144 14 43	4.57716	23.470
Post	337 19 38	157 21 51	4.25651	11.217

CEDAR, PECOS COUNTY, TEX.

About 30 miles southeast of Girvin and about 2 miles southeast of Shebina's ranch, near an old road running from the ranch east and south over the divide to a "tank." The station is on the highest part of the divide in this vicinity and is about half a mile west of the tank, 85 feet northwest of the road at a point 400 feet southwest from a dim road fork.

Station mark: Aluminum tablet cemented in a boulder set flush with the ground with a pile of rocks about 2 feet high over it.

Signal: A pile of cedar brush 25.1 feet northwest from the station.

[Latitude 30° 46′ 03.07″. Longitude 102° 10′ 23.73″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Windmill	8 19 04.90	188 18 35.42	4.0261434	6.599
Tower	81 03 36.17	261 00 06.83	4.0422684	6.849
Corner	117 35 09.90	297 32 00.37	4.0455126	6.900
Indian	178 19 22.93	358 19 13.24	4.2522870	11.108
Slaughter	293 17 07.16	113 21 47.14	4.2005237	9.860
Blackstone	303 05 37.64	123 12 03.29	4.3802250	14.913

CENTER, TERRELL COUNTY, TEX.

Is 40 miles by road northeast of Sanderson and 35 miles southwest of Sheffield, 1 mile east of Sanderson-Sheffield road where it crosses mesa south of Dry Creek, 3 miles northeast of Corder's "55" well in McKay Draw near Anderson-Sheffield road, 0.25 mile south of a very dim road which runs east and west along top of mesa and joins Sanderson-Sheffield road at a point where it breaks over south slope of mesa, 0.25 mile southeast of a natural depression or water hole (dry) beside the road, on a point of mesa which juts out to the south from main mesa.

Station mark: Standard bronze bench-mark tablet cemented in drill hole in a rock set flush with ground.

Signal: Quadripod of lumber, covered with white and black cloth, with white flag over center, centered over station mark.

[Latitude 30° 26′ 05.37″. Longitude 102° 06′ 54.76″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
King	8	11	18.98	188	10	32.06	4.2410999	10.826
Russell	65	40	19.57	245	33	35.66	4.3692453	14.541
Corder	118	34	40.79	298	31	15.33	4.0902116	7.648
Mitchell	223	01	04.85	43	03	07.05	3.9740934	5.854
Brown	303	15	22.96	123	19	09.39	4.1550102	8.879

CHANCELLOR, PECOS COUNTY, TEX.

A station of the U. S. Coast and Geodetic Survey, about 20 miles southwest of Fort Stockton, 3 miles due east from Chancellor station on Kansas City, Mexico & Orient R. R., and near the highest point of a small conical hill locally known as Pikes Peak. The Chancellor-Elsinor ranch road passes 1 mile south of the station.

Station mark: Disk in flat top of rock flush with ground.

Reference mark: Standard disk reference mark wedged in a drill hole in outcrop in bedrock. Mark is 2 inches above ground and 3 meters north of highest point of hill.

[Latitude 30° 41′ 25.463″. Longitude 103° 05′ 09.138″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Arbuckle	30	22	17	210	18	57	4.31542	12.846
Rooney	205	15	18.48	25	20	00.32	4.5341086	21.255
School	200	38	09	40	44	11	4.45958	17.903
Belding	228	50	34	48	53	30	4.08451	7.548
Three-Mile	234	32	49.03	54	41	15.20	4.5087417	20.049
Round	271	32	56	91	41	22	4.42123	16.390
Divide	323	22	43	143	27	40	4.41591	16.190
Glass	357	07	02	177	07	31	4.48677	19.060
Ord (C. & G. S.)	39	41	00.25	219	27	56.62	4.8110102	40.22
Beard (C. & G. S.)	110	14	48.00	290	01	28.59	4.6461849	27.51
Star (C. & G. S.)	98	16	31.00	277	54	47.71	4.8358451	42.58
Madera (C. & G. S.)	303	09	27.52	123	14	44.44	4.2964052	12.29
Nation (C. & G. S.)	339	56	54.99	160	00	37.93	4.5334195	21.22

CONCHO, REAGAN COUNTY, TEX.

No description available.

[Latitude 31° 25′ 34.99″. Longitude 101° 23′ 48.71″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Japson	44	45	05.15	224	40	20.52	4.3127239	12.767
Stiles	87	11	48.95	267	06	01.20	4.2464993	10.961
Sawyer	290	26	36.12	110	30	34.88	4.1112824	8.028
Bar S	333	28	04.56	153	31	01.39	4.3038976	12.510

CORDER, TERRELL COUNTY, TEX.

About 30 miles northeast of Sanderson, 15 miles southeast of Free post office, 6 miles southeast of Corder headquarters ranch along Sanderson-Free road, 2 miles east of Dick Corder's ranch, 2 miles south of Corder's "17" well, 1 mile north of Monty & Corder's ranch, on highest part of ridge, 750 feet east of road leading north from Monty & Corder's place to "17" well.

Station mark: Bronze bench-mark tablet cemented in drill hole in rock 10 inches square, set flush with ground.

Signal: A 2 by 4 pole 14 feet high, with cross targets of white and black cloth, braced with four guy wires, and centered over station mark.

[Latitude 30° 29′ 16.40″. Longitude 102° 13′ 40.05″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Russell	34	02	44.09	213	59	25.06	4.2730771	11.653
Downie	92	50	08.33	272	42	51.91	4.3610386	14.269
Free	149	45	48	329	43	42	4.11808	8.155
Windmill	190	12	24.89	10	13	35.40	4.3184949	12.937
Dean	193	09	26	13	10	13	4.03173	6.685
Blackstone	234	44	54.85	54	52	58.75	4.4916887	19.277
Mitchell	266	37	19.84	86	42	47.79	4.2371737	10.728
Center	298	31	15.33	118	34	40.79	4.0902116	7.648
King	340	08	39.17	160	11	17.20	4.3906821	15.277

CORNER, PECOS COUNTY, TEX.

About 20 miles southeast of Girvin, on the most northerly part of the high mesa west of Shebina's ranch, and about 3 miles from the ranch. The station is near a fence corner, being in the southwest corner of Mr. Shebina's spring pasture. There is also a fence forming a T corner a few hundred feet north of this corner and running west. The station is 327.8 feet east of the north and south fence and 105.2 north of the east and west fence. The instrument was set on an 8-foot observing tower in order to see stations Parles, Baker, and Cedar. There is a small pile of rocks over the station.

Station mark: Aluminum tablet cemented into boulder set flush with the ground.

Signal: Twenty-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 30° 48′ 49.955″. Longitude 102° 16′ 34.04″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Tower	8	37	19.20	188	36	59.20	3.8410218	4.309
McKenzie	74	00	25.17	253	54	07.88	4.3094617	12.671
Square	90	38	22	270	34	27	4.08596	7.574
Parks	127	48	55.31	303	42	50.92	4.3776045	14.824
Livingston	162	11	10.76	342	09	03.83	4.3310450	13.317
Shebina	177	05	57	357	05	53	3.60460	2.500
Pecos	205	21	59.20	25	26	44.49	4.5354817	21.322
Indian	216	09	43.70	36	12	43.59	4.1979385	9.801
Baker	249	41	03.32	69	47	34.52	4.3346478	13.428
Cedar	297	32	00.37	117	35	09.90	4.0455126	6.900

COX, REAGAN COUNTY, TEX.

About 7 miles southeast of Big Lake and about 1.5 miles south of the Kansas City, Mexico & Orient R. R. track at point where track crosses the divide east of Big Lake. The station is on a grassy rise near a fence corner, being about 600 feet south of an east and west fence and about 1,500 feet west of a north and south fence.

Station mark: Standard bench-mark post projecting 8 inches above ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 08′ 43.30″. Longitude 101° 23′ 15.37″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Carroll	74	30	13	254	17	10	3.98856	6.052
Law	102	52	27.52	282	43	34.04	4.4469734	17.391
Big Lake	127	17	19	307	14	59	3.95707	5.629
Japson	137	11	26.07	317	06	25.30	4.3537886	14.033
Bar S	211	40	38.89	31	43	17.73	4.1888021	9.597
Owens	296	41	29.92	116	45	47.89	4.1705519	9.202
Last	339	18	24	159	19	02	3.74245	3.434

COW, UPTON COUNTY, TEX.

About 11 miles northeast of Rankin, about 1 mile southeast of the old Rankin-Stiles road, now no longer used as a first-class road, and about at right angles across the road from a windmill in a large open flat northwest of the road. The station is on the highest part of a low gradual rise that forms the highest point within several miles.

Station mark: Standard iron bench-mark post, projecting 10 inches above ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 20′ 12.23″. Longitude 101° 50′ 44.98.″]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Nolke	16	50	32.95	196	48	24.85	4.3537798	14.032
King (2)	60	12	20.46	240	02	44.73	4.5295724	21.034
Fence	231	47	06.24	51	50	05.64	4.0639973	7.200
Japson	279	16	57.61	99	26	13.39	4.4572214	17.876
Low	312	28	37.63	132	33	58.89	4.3466931	13.805
Gunny	335	29	38.74	155	32	18.95	4.2947502	12.249

DEAN, TERRELL COUNTY, TEX.

About 50 miles northeast of Sanderson, 10 miles east by road from Free post office, on mesa along south side of Independence Draw, 2 miles southeast from the Mansfield ranch in Independence Draw now occupied by D. Dean, 1 mile east of Corders "little mill" in draw on south side of Independence Draw, half a mile north of road leading from Independence Draw near the Mansfield place, southeast and south over divide to "Dick" Corder's ranch, 20 feet south of an east-west fence line where it crosses highest point of mesa.

Station is best reached from the south by leaving above-mentioned road where it crosses divide, about 0.5 mile southeast of the "little mill," and following highest part of mesa northward to fence line near which station is located.

Station mark: Bench-mark tablet cemented in solid outcropping rock.

Signal: A cedar tree about 10 feet high, with white flag in top and white cloth around bottom, centered over station mark.

[Latitude 30° 34′ 56.58″. Longitude 102° 12′ 08.14″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Corder	13	10	13	193	09	26	4.03173	6.685
Windmill	187	04	34	7	04	45	4.00398	6.271
Mitchell	302	37	08	122	41	50	4.24434	10.907

DIVIDE, PECOS COUNTY, TEX.

A 3-point station on top of the highest cone-shaped hill in the near vicinity, about 28 miles south of Fort Stockton, and about 1.5 miles east of the Fort Stockton road where the road passes the divide.

Not marked.

[Latitude 30° 30′ 06.00″. Longitude 102° 55′ 26.28″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Glass	55 18 18	235 13 50	4.23161	10.592
Chancellor	143 27 40	323 22 43	4.41591	16.190
Madera	185 52 26	5 52 46	4.00607	6.301
Tally	267 40 53	87 44 37	4.07156	7.327

DOWNIE, PECOS COUNTY, TEX.

About 30 miles by road north of Sanderson, 15 miles southwest by road from Free post office, on divide between Big Canyon and South Fork of Independence Draw, 500 feet northeast from second-class road which runs from Downie's north well in Big Canyon up over divide into Independence Draw and joins the Sanderson-Fort Stockton road at McGregor's well, 1 mile west of Wakefield's ranch.

Station is near north end of a narrow-topped ridge extending northwest and southeast about 0.5 mile, in McGregor's pasture, and in southwest corner of his holdings, 1 mile southeast of Rachel's south well.

A rock monument 4 feet high is 25 feet north of station.

Station mark: Bronze tablet cemented in solid outcropping rock.

Signal: Quadripod of poles, covered with white and black cloth, with white flag over center. Signal centered over station mark.

[Latitude 30° 29′ 52.51″. Longitude 102° 28′ 00.10″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Madera	103 53 15.06	283 39 38.25	4.6445023	27.406
Rachel	135 10 03	315 08 24	3.82272	4.131
McKenzie	177 21 29.75	357 21 03.77	4.4686511	18.281
Trent	187 21 31	7 22 29	4.37396	14.700
Tower	211 24 32.05	31 30 01.65	4.5187990	20.519
Windmill	233 51 47.13	54 00 15.27	4.5174156	20.453
Free	237 52 33	57 57 44	4.28449	11.963
Corder	272 42 51.91	92 50 08.33	4.3610386	14.269

FENCE, UPTON COUNTY, TEX.

About 17 miles northeast of Rankin and about 2 miles north of a prominent windmill with a large tree standing near it. There is a line fence running north about 0.25 mile west of this tree and windmill, and the station is 2 feet west of this fence at the highest point that the fence passes over.

Station mark: Aluminum tablet cemented in a rock set with its upper face about 2 inches above the ground. A small pile of rocks is centered over the mark.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 24′ 04.86″. Longitude 101° 45′ 00.34″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gunny	2 09 58.03	182 09 39.41	4.4000638	15.610
Cow	51 50 05.64	231 47 06.24	4.0639973	7.200
Stiles	263 10 35.23	83 15 50.30	4.2063496	9.993
Japson	301 38 05.42	121 44 22.43	4.3524043	13.988
Low	341 52 03.59	161 54 26.12	4.3680416	14.501

FREE, TERRELL COUNTY, TEX.

About 40 miles north and east by road from Sanderson, 2 miles east from Free post office, 1 mile southeast from nearest point on road leading from Free post office up over mesa north to Harrall's ranch, on highest point of mesa lying between Main Fork and South Fork of Independence Draw, and due north about 1 mile from Kerris well in South Fork of Independence Draw.

Station may be reached in wagon or buckboard by leaving road which runs up over mesa north from F. M. Edwards's well, near Free post office, at a point about 0.25 mile south of where it leaves mesa on north side and following highest part of mesa southeast about 1 mile.

Station mark: Standard bronze tablet cemented in rock set flush with ground.

Signal: Quadripod of poles, covered with white and black cloth, with white flag over center. Signal centered over station mark.

[Latitude 30° 35′ 24.55″. Longitude 102° 17′ 48.12″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Downie	57 57 44	237 52 33	4.28449	11.963
Windmill	228 20 11	48 23 28	4.13918	8.561
Corder	329 43 42	149 45 48	4.11808	8.155

FLAT, BREWSTER COUNTY, TEX.

About 9 miles north and a little east of Alpine, 3 miles west of the Alpine-Fort Stockton road, and about 2 miles northwest of Jackson Harmon ranch, on the south end of a short high ridge consisting of three hills.

Station mark: Aluminum tablet on highest part of hill.

Signal: A 20-foot cedar tree in natural position, in azimuth 159° 55′ from station, and distant 13.7 feet.

[Latitude 30° 28′ 06.03″. Longitude 103° 32′ 49.63″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gillion	284 20 23	104 27 48	4.38378	15.036
Ord	353 03 53	173 04 51	4.40571	15.815

FORT STOCKTON SCHOOL, PECOS COUNTY, TEX. (Not occupied.)

High tower and windmill standing beside the high-school building in Fort Stockton. The schoolhouse stands on high ground, and the windmill is the most prominent one in town.

Station mark: Center of tower.

Signal: Tower and windmill.

[Latitude 30° 53′ 14.95″. Longitude 102° 53′ 22.68″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Madera	3 56 47	183 56 04	4.51537	20.356
Chancellor	40 44 11	220 38 09	4.45958	17.903
Three-Mile	292 47 32	112 49 57	3.91122	5.065

FUNK, IRION COUNTY, TEX.

In Irion County, in Funk's pasture, about 10 or 12 feet east of line of fence through which road from San Angelo to Kiowa Creek passes, and about 2 miles north of the Kiowa Creek road. The gate through which the road goes is about 2 miles west from first house on right of road after crossing Dry Rocky Creek going westward. Signal is at top of 12-foot observing platform. Center of station is marked by a rock sunk in ground, on which is cut "U. S. G. S." (See Bulletin 122, page 223.)

This station was found as described, rock marking station showed evidence of having been disturbed in the last few years, U. S. Geological Survey standard bronze tablet set in old depression that evidently was place of old station mark for several years. Tablet is 115 feet east of new fence line, 17 feet east of old fence line.

Signal: 2 by 4 scantlings nailed together, with cross targets, centered over station mark, and guyed with wire.

Station mark: Bronze tablet, cemented in stone set in place, and referenced as follows: Rock marked+30.4 feet distant. Rock marked+32.75 feet distant.

[Latitude 31° 31′ 12.88″; Cisco datum, Bull. 122, 31° 31′ 20.22″. Longitude 100° 48′ 52.31″; Cisco datum, Bull. 122, 100° 48′ 47.32″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Lopez (Cisco datum)	10 25 13.80	190 24 02.29	4.3018760	12.452
Lopez	10 24 50.42	190 23 38.95	4.3019550	12.454
Ketchum	50 41 56.49	230 34 35.59	4.4604851	17.941
Irion	85 21 51.32	265 15 45.16	4.2682521	11.524

GAGE, BREWSTER COUNTY, TEX. (Not occupied.)

About 6 miles southwest of Marathon, on the highest knob of a group of low hills in Gage's pasture, near old road running to Robert's ranch from "The Post."

Signal: Small flat-topped bush on the highest part of the hill.

[Latitude 30° 07′ 51.12″. Longitude 103° 21′ 10.24″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Leonard	208 19 39	28 23 16	4.38782	15.176
Nation	231 14 11	51 25 56	4.68052	29.776
Horse	295 31 01	115 38 07	4.40160	15.666

GILLION, BREWSTER COUNTY, TEX.

On the last high knob on north end of a high ridge, about 18 miles north and a little east of Marathon. Can be reached from that town by wagon 12 miles to Hess ranch, thence about 6 miles on horseback northwest over into Gillion Canyon and west over a low gap to the foot of the hill. Difficult to climb on horseback.

Station mark: Bronze tablet in solid rock on highest part of last knob.

Signal: Cairn centered over station, about 6 feet in diameter at base and about 8 feet high.

[Latitude 30° 24′ 50.56″. Longitude 103° 18′ 11.28″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Ord	46 42 42	226 36 17	4.44781	17.424
Flat	104 27 48	284 20 23	4.38378	15.036
Leonard	325 28 54	145 31 07	4.07959	7.463
Horse	336 58 39	157 04 16	4.66198	28.532

GIRVIN, PECOS COUNTY, TEX. (Not occupied.)

Sighted from two stations only. No description available.

[Latitude 31° 01′ 40.24″. Longitude 102° 25′ 36.62″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Parks	26 00 31	205 59 05	4.00583	6.298
Livingston	292 55 41	112 58 12	3.92995	5.288

GLASS, PECOS COUNTY, TEX.

(Called "Last tree" in previous notes.) About 20 miles northeast of Marathon, about 6 miles northwest of Decie ranch, on the last high knob on northeast end of high ridge of Glass Mountains. Point is on the last high spur running north, overlooking country to north and west, and is not on the highest part of ridge. It is 2 miles west of a tank near the top of the lowest part of the ridge, from which a poor road runs northwest.

Station mark: Bronze tablet in solid rock on highest part of hill.

Signal: Small cairn, with top of a cedar tree in its top, the whole standing about 8 feet high, centered over station.

[Latitude 30° 24′ 50.62″. Longitude 103° 04′ 11.34″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Arbuckle	136 51 44	316 48 01	4.24405	10.899
Chancellor	177 07 31	357 07 02	4.48677	19.060
Divide	235 13 50	55 18 18	4.23151	10.592
Nation	278 06 49	98 10 02	4.01156	6.381

GUNNY, UPTON COUNTY, TEX.

Approximately 12 miles east of Rankin, about 3 miles south of the railroad section house, on the highest part of the mesa lying south of the Kansas City, Mexico & Orient R. R., just east of a low gap. There is an old road running through this gap and an old road crossing the mesa toward the south, about 1 mile east of the station. A small pile of rocks is centered over the station.

Station mark: Aluminum tablet cemented in a boulder, set flush with the ground.

Signal: A 16-foot 2 by 4 scantling with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 10′ 29.70″. Longitude 101° 45′ 36.20″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Nolke	76 01 07.19	255 56 19.63	4.1810473	9.428
Cow	155 32 18.95	335 29 38.74	4.2947502	12.249
Fence	182 09 39.41	2 09 58.03	4.4000638	15.610
Low	250 22 47.46	70 25 28.09	3.9404255	5.417
Mex	357 51 15.63	177 51 27.96	4.2280958	10.506

HALFF, UPTON COUNTY, TEX.

About 2 miles north and a little west of Rankin, and about 1,500 feet west of the Rankin-Upland road, being about northwest from the gate and cattle guard through which this road passes approximately 1.5 miles north of Rankin. The station is on the highest part of the mesa, a small pile of rocks being centered over it. (A secondary point.)

Station mark: Aluminum tablet cemented in a boulder set flush with the ground.

Signal: A 20-foot 4 by 4 timber with cross targets, guyed with wire and centered over station.

[Latitude 31° 14′ 59.35″. Longitude 101° 57′ 01.46″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Pecos	43 23 44	223 18 21	4.37732	14.814
King (2)	69 37 36	249 31 16	4.31605	12.865
Nolke	344 01 22	164 02 29	4.09555	7.743

HEN, TERRELL COUNTY, TEX.

A station of the U. S. Coast and Geodetic Survey 6 miles by road north of Dryden, 1 mile west of Dryden-Sheffield road, and 100 meters east of old stone quarry.

Station mark: Coast and Geodetic Survey tablet in concrete post.

Reference mark: Coast and Geodetic Survey reference tablet 8.5 meters distant, true azimuth 238° 40′.

[Latitude 30° 07′ 06.358.″ Longitude 102° 07′ 01.624″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Russell	140 15 53.19	320 09 14.65	4.5194506	20.549
King	172 39 17.23	352 38 33.98	4.2546929	11.170
Eldridge (C. & G. S.)	21 10 13.73	201 08 44.90	4.1192181	8.176
Dryden W. Base (C. & G. S.)	33 43 34.97	213 42 04.59	3.9394482	5.405
Road (C. & G. S.)	52 10 39.50	232 05 08.15	4.3511906	13.95
Sanderson	113 21 57.14	293 14 54.43	4.3893883	15.23
Hoddy (C. & G. S.)	274 13 47.92	94 22 55.67	4.4671135	18.22
Peggy (C. & G. S.)	337 15 30.13	157 18 06.62	4.3363467	13.48

HOBBS, IRION COUNTY, TEX.

Is 2.5 miles northeast of Barnhart, 1 mile northeast of A. D. Hobbs's ranch house, on top of the highest hill in his pasture.

Signal: A 2 by 4 scantling with cross targets, guyed with wire and centered over station mark.

Station mark: Aluminum tablet stamped, "Texas," cemented in stone set in place and referenced as follows:

Rock marked 1+ is 30.70 feet distant, S. 18° 42′ W., true. Rock marked 2+ is 28.55 feet distant, N. 71° 33′ W., true. Instrument on center.

[Latitude 31° 09′ 57.72″. Longitude 101° 09′ 33.45″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Owens	43 42 20	223 39 39	4.09271	7.692
Monte	248 32 17	68 34 17	3.82059	4.111
Barnhart	355 37 36	175 37 52	4.02876	6.639

HOCK, PECOS COUNTY, TEX.

About 25 miles by road southeast from Fort Stockton, 8 miles north of Rachel's headquarters ranch, 2 miles north of Colonel Hock's windmill and tank, 1 mile north of large earth tank in draw on south slope of mesa, on top of mesa near head of main branch of this same draw.

Station is on highest point of mesa between two draws, but a higher point is across flat divide, distant about 1 mile northwest of same mesa.

Station may be reached in car or wagon by turning off road about 0.5 mile northwest of Hock's well and tank just after passing through gate, going north up draw past earth tank, taking a dim road and cattle trail to the left about 0.5 mile past this tank and continuing up point of ridge to top.

Station mark: Drill hole in rock with triangle cut around it, the rock being set in top of a large pile of small crushed rock known as an Indian "Sotol Oven."

Signal: Cairn of rock 5 feet high with large "Spanish Dagger" plant set in top, the whole being about 8 feet high, and with white flags over center. Signal centered over station mark.

[Latitude 30° 39′ 50.49″. Longitude 102° 34′ 30.26″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Madera	76 21 58	256 11 35	4.52327	20.731
McKenzie	219 24 24	39 27 17	4.15256	8.829
Rachel	337 21 47	157 23 36.	4.17149	9.222

HORSE, BREWSTER COUNTY, TEX.

Situated on the highest part of Horse Mountain, about 13 miles southeast of Marathon railroad station and post office.

Station mark: Bronze tablet cemented in solid rock.

Signal: Cairn centered over tablet.

[Latitude 30° 01′ 57.65″. Longitude 103° 07′ 01.06″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gage	115 38 07	295 31 01	4.40160	15.666
Ord	121 04 09	300 52 09	4.65081	27.807
Post	132 42 31	312 37 47	4.31416	12.809
Castle	144 14 43	324 07 46	4.57716	23.470
Gillion	157 04 16	336 58 39	4.66198	28.532
Leonard	161 05 03	341 01 34	4.53444	21.271
Stillwell	198 34 00	18 36 04	4.44614	17.358
Nation	199 47 47	19 52 24	4.63747	26.966

INDEPENDENCE, TERRELL COUNTY, TEX.

Is 20 miles southwest of Sheffield post office, 3 miles northwest of Curruther's place (Blackstone & Slaughter's), in Independence Draw, 2 miles north of Blackstone & Slaughter's "west well," in Independence Draw, 1 mile west of old road from "west well" to "north well" in Surveyors' Canyon, on highest part of mesa lying north of Independence Draw and west of road. Station is best reached by turning west from this old road at point where it crosses low divide and following highest part of mesa west to station.

Station mark: Drill hole in solid outcropping rock, with triangle cut around it.

Signal: Cedar tree with white flag in top, braced with four guy wires, and centered over station mark.

[Latitude 30° 37′ 24.11″. Longitude 102° 02′ 15.87″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Windmill	110 40 48	290 36 10	4.19099	9.646
Slaughter	189 19 57	9 20 28	3.99249	6.107
Blackstone	248 06 28	68 08 43	3.88482	4.766

INDIAN, PECOS COUNTY, TEX.

About 15 miles southeast of Girvin, on the large mesa north of the Fort Stockton-Sheffield road, and west of the Baker ranch. The station is about in the middle of the high part of the mesa, of which the axis runs about east and west, and commands a view north and south, but from the ground the ends of the high part of the mesa obstruct the view east and west. The theodolite was elevated about 8 feet in order to see stations Livingston and Baker.

Station mark: Aluminum tablet cemented in boulder and set flush with the ground. A small pile of rocks is centered over the tablet.

Signal: A 16-foot 4 by 4 scantling, guyed with wire, bearing cross targets, is centered over station.

[Latitude 30° 55′ 43.36″. Longitude 102° 10′ 43.46″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Corner	36	12	43.59	216	09	43.70	4.1979385	9.801
Livingston	115	50	56.53	295	45	49.01	4.2460119	10.949
Pecos	196	29	40.03	16	31	25.17	4.2799091	11.837
Baker	295	34	28.19	115	37	59.98	4.0843183	7.545
Cedar	358	19	13.24	178	19	22.93	4.2522870	11.108

IRION, IRION COUNTY, TEX.

Is 14 miles northwest of Arden, and about 8 miles north and 2 miles west of Irion City, 1.5 miles south, 27° 00′ east from a windmill and earth tank which is on a road running northwest from Arden. Is 100 feet north of an east-west fence line, near top of flat ridge.

Signal: A 4 by 4 scantling with cross targets, centered over station mark, and guyed with wire.

Station mark: Bronze tablet cemented in stone set in place, and referenced as follows: Rock marked + distant 27.73 feet southeast. Rock marked + distant 27.73 feet southwest.

[Latitude 31° 30′ 23.68″. Longitude 101° 00′ 32.83″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Ketchum	12	50	13.03	192	48	57.52	4.2361876	10.704
Rock	63	50	32.77	243	48	00.97	3.9318105	5.311
Funk	265	15	45.16	85	21	51 32	4.2682521	11.524
Lopez	320	41	00.79	140	45	54.56	4.3712161	14.607

JAPSON, REAGAN COUNTY, TEX.

About 10 miles northwest of Big Lake and about 3 miles northwest of Roy Japson's ranch. The station is on the western one of two low hills, which are the only prominent rises in the vicinity. A small pile of rocks is centered over the station.

Station mark: Aluminum tablet cemented in a boulder set flush with the ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over station.

[Latitude 31° 17′ 40.90″. Longitude 101° 32′ 55.64″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Low	49	02	31.91	228	58	38.29	4.1983148	9.810
Cow	99	26	13.39	279	16	57.61	4.4572214	17.806
Fence	121	44	22.43	301	38	05.42	4.3524043	13.988
Stiles	166	58	55.62	346	57	53.11	4.1487866	8.753
Concho	224	40	20.52	44	45	05.15	4.3127239	12.767
Bar S	278	13	07.86	98	20	48.32	4.3748626	14.730
Cox	317	06	25.30	137	11	26.07	4.3537886	14.033
Big Lake	323	36	47	143	39	27	4.13824	8.543

KETCHUM, IRION COUNTY, TEX.

About 17 miles northeast of Barnhart, about 4.5 miles southwest from Irion City; on north edge near west end of highest and most prominent flat-topped peak on Ketchum Mountain.

Signal: A 2 by 4 scantling with cross targets, centered over station mark, and guyed with wire.

Station mark: Aluminum tablet cemented in stone set in place and referenced as follows: Hole drilled in solid rock, 54.3 feet distant, N. 69° 00′ W.; hole drilled in solid rock, 37.3 feet distant, N. 38° 00′ E.

[Latitude 31° 21′ 18.32″. Longitude 101° 02′ 57.63″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Monte	13	07	31.56	193	06	06.81	4.2795966	11.289
Bar S	67	18	02.56	247	10	09.07	4.4171336	16.236
Windmill	77	31	43	257	26	04	4.24634	10.957
Sawyer	99	14	05.32	279	07	12.57	4.3268392	13.188
Rock	163	32	17.60	343	31	01.60	4.1329992	8.440
Irion	192	48	57.52	12	50	13.03	4.2361876	10.704
Funk	230	34	35.59	50	41	56.49	4.4604851	17.941
Lopez	274	13	48.44	94	19	56.91	4.2735494	11.665
Suggs	326	07	56.25	146	10	14.57	4.1016615	7.853

KING, TERRELL COUNTY, TEX.

Is 25 miles by road north from Dryden, 5 miles northeast of King Spring ranch, 0.75 mile east of road from King Spring ranch to Brown headquarters ranch in Big Canyon, on small knoll on mesa, 600 feet east of fence corner, and about 20 feet north of the line of the east-west fence. A dim wagon road leading off from the King Spring-Brown ranch road at a point near where it reaches top of mesa, about 5 miles north of King Spring leads up to corner of fence mentioned above.

Station mark: Standard bronze tablet cemented in drill hole in solid outcropping rock.

Signal: A 2 by 4 scantling, 14 feet high, with cross targets of white and black cloth, braced with four guy wires, and centered over station mark.

[Latitude 30° 16′ 45.35″. Longitude 102° 08′ 27.61″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Sanderson	68	07	31.14	248	01	10.71	4.3378546	13.527
Russell	111	57	50.32	291	51	54.21	4.3078936	12.625
Corder	160	11	17.20	340	08	39.17	4.3906821	15.277
Center	188	10	32.06	8	11	18.98	4.2410999	10.826
Brown	236	53	00.50	56	57	33.28	4.2362009	10.704
Hen	352	38	33.98	172	39	17.23	4.2546929	11.170

KING (2), UPTON COUNTY, TEX.

On the southeast part of the big mesa lying north of the road between Girvin and Rankin and about halfway between these two towns. The station is on the highest part of the mesa in the near vicinity, about 1 mile west of the southeastern point of the mesa, and about 4 miles southeast of King's ranch, which is on the top of the mesa. A small pile of rocks is centered over the station.

Station mark: Aluminum tablet cemented in a boulder set flush with the ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 11′ 04.74″. Longitude 102° 09′ 14.43.″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Livingston	41 22 06.60	221 16 11.96	4.4403965	17.130
King's Mill	152 50 03	332 49 07	3.78902	3.903
Cow	240 02 44.73	60 12 20.46	4.5295724	21.034
Halff	249 31 16	69 37 36	4.31605	12.865
Nolke	281 41 51.58	101 49 17.87	4.3679341	14.497
Pecos	343 12 54.90	163 13 54.39	4.0236284	6.561

KING'S MILL, UPTON COUNTY, TEX. (Not occupied.)

On the big mesa about halfway between Girvin and Rankin, and north of the Kansas City, Mexico & Orient R. R. The station is the prominent windmill and tower at King's ranch, about 15 miles west of Rankin, and is accessible by road on the east side of the mesa.

Station mark and signal: Windmill and tower.

[Latitude 31° 14′ 06.17″. Longitude 102° 11′ 02.78″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Livingston	30 16 47	210 11 48	4.48334	18.910
King (2)	332 49 07	152 50 03	3.78902	3.903
Pecos	339 19 53	159 21 46	4.22467	10.424

LAST, REAGAN OR CROCKETT COUNTY, TEX.

Is 8 miles southeast of Big Lake and about 2.5 miles northeast of an old ranch on the Big Lake-Ozona road. There is a windmill and tank 0.5 mile east of the ranch house, and from this tank there is a dim road running northeast. The station is 0.5 mile southeast of this road, on the highest rise in the vicinity, commanding a clear view to the south. A prominent windmill stands 2 miles northwest of the station. A small pile of rocks is centered over the tablet.

Station mark: Aluminum tablet cemented in a boulder set flush with the ground. Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 05′ 55.42″. Longitude 101° 22′ 01.68″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Carroll	102 46 11	282 42 30	4.06543	7.224
Low	111 19 18	291 09 46	4.49669	19.500
Cox	159 19 02	339 18 24	3.74245	3.434
Owens	277 30 05	97 33 45	4.05599	7.069

LEONARD, BREWSTER COUNTY, TEX.

On the highest part of Mount Leonard, about 10 miles north of Marathon, and about 2 miles south of the Hess ranch. Can be climbed on horseback from the Hess ranch.

Signal mark: A bronze tablet set in solid rock.

Signal: A cairn about 7 feet in diameter and 8 feet high, centered over the station.

[Latitude 30° 19′ 29.16″. Longitude 103° 13′ 56.49″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gage	28 23 16	208 19 39	4.38782	15.176
Ord	71 06 55	250 58 09	4.45900	17.879
Gillion	145 31 07	325 28 54	4.07959	7.463
Nation	251 48 16	71 56 24	4.43368	16.867
Stillwell	286 23 31	106 29 48	4.31901	12.953
Horse	341 01 34	161 05 03	4.53444	21.271

LIVINGSTON, PECOS COUNTY, TEX.

Six miles south of Girvin, on the east side of the road running south from Girvin to Sheffield. The station is about half a mile east of the road, on the highest part of the mesa, near the junction of the northwestern wing with the main body of the mesa. There are two small piles of rock as witness marks, in approximate bearings, S. 84° 30′ E. and N. 68° 15′ W. from the station, and 9 and 13 feet distant, respectively.

Station mark: Aluminum tablet cemented in a boulder set flush with the ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 30° 59′ 52.44″. Longitude 102° 20′ 41.17″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Square	15	29	39	195	27	49	4.32295	13.071
McKenzie	26	35	33.08	206	31	21.60	4.4640341	18.088
Parks	64	47	21.76	244	43	23.56	4.1329012	8.438
Twelve-Mile	83	09	44.43	262	59	21.40	4.5099118	20.103
Girvin	112	58	13	292	55	41	3.92995	5.288
King's Mill	210	11	48	30	16	47	4.48334	18.910
King (2)	221	16	11.96	41	22	06.60	4.4403965	17.130
Pecos	243	27	17.64	63	34	11.14	4.3757449	14.760
Indian	295	45	49.01	115	50	56.53	4.2460119	10.949
Corner	342	09	03.83	162	11	10.76	4.3310450	13.317

LOPEZ, IRION COUNTY, TEX.

(From Bulletin 122, page 223.) In Irion County, on easternmost of the Lopez peaks, about 6 miles northwest of Sherwood. Road from Sherwood to Komer's ranch passes about 0.5 mile west of station. Signal: Scantling set in pile of rocks. Rock marking station is 6.04 feet S. 62° 58′ E. from center.

This station was found as described; the station mark showed no evidence of having been disturbed. U. S. Geological Survey standard tablet was set in place of original station mark, which was rock marked "U. S. G. S."

Supplement to original description as follows.

Signal: A 2 by 4 scantling with cross targets, centered over station mark, and guyed with wire.

Station mark: Bronze tablet cemented in stone set in place and referenced as follows: Solid rock marked + 36.75 feet distant, true azimuth 199° 10′. Solid rock marked + 37.56 feet distant, true azimuth 266° 10′. Instrument on center.

[Latitude 31° 20′ 32.81″; Cisco datum, Bulletin 122, 31° 20′ 40.27″. Longitude 100° 51′ 09.36″; Cisco datum, Bulletin 122, 100° 51′ 04.44.″]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Suggs	52	09	13.42	232	05	23.74	4.1706024	9.203
Ketchum	94	19	56.91	274	13	48.44	4.2735484	11.665
Irion	140	45	54.56	320	41	00.79	4.3712161	14.607
Funk	190	23	38.95	10	24	50.42	4.3019550	12.454
Bolt	358	54	17.25	178	54	25.79	4.3585343	14.187
Bolt (Cisco datum)	358	54	21.07	178	54	29.61	4.3584995	14.186

LOW, REAGAN COUNTY, TEX.

Thirteen miles west of Big Lake, about 2 miles south of the Kansas City, Mexico & Orient R. R. track at a point approximately 3 miles west of the grade crossing of the main Rankin-Big Lake road. The station is on the highest part of a point of the mesa, and far enough north on this point to afford a clear view of all low country to the north. There is an old road running along the mesa about 1.5 miles south of the station, which drops into the head of a draw toward Big Lake at a point about due south of the station. A small pile of rocks is centered over the station.

Station mark: Aluminum tablet cemented in a boulder, set flush with the ground.

Signal: A 16-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 12′ 04.65″. Longitude 101° 40′ 26.00″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Gunny	70	25	28.09	250	22	47.46	3.9404255	5.417
Cow	132	33	58.89	312	28	37.63	4.3466931	13.805
Fence	161	54	26.12	341	52	03.59	4.3680416	14.501
Stiles	199	54	34.90	19	57	26.51	4.4084697	15.915
Japson	228	58	38.29	49	02	31.91	4.1983148	9.810
Big Lake	271	59	06	92	05	39	4.30301	12.484
Cox	282	43	34.04	102	52	27.52	4.4469734	17.391
Last	291	09	46	111	19	18	4.49669	19.500

McKENZIE, PECOS COUNTY, TEX.

About 30 miles east and a little south of Fort Stockton, about 5 miles east of the McKenzie ranch, on the highest part of the mesa-like divide. A dim road leaving the McKenzie ranch-Anderson ranch road about half a mile east of "Bull tank" and crossing the divide to Mr. Williams's place, passes within a mile of the station, which is northwest along the divide from the point where the road crosses the ridge. The station is about 2 miles north and a little east of "Bull tank" and is about a quarter of a mile east of a north and south fence, on the top of a rounded rise.

Station mark: Aluminum tablet cemented in a boulder, set flush with the ground. A pile of rocks about 2 feet high is centered over the station.

Signal: A 24-foot 6 by 6 timber, with cross targets, guyed with wire, standing about north from the station, and distant 4.1 feet.

[Latitude 30° 45′ 46.96″. Longitude 102° 28′ 51.16″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Rachel	7	40	55	187	39	51	4.39619	15.472
Hock	39	27	17	219	24	24	4.15256	8.829
Madera	65	35	50.75	245	22	36.78	4.6582591	28.288
Three-mile	108	40	41.95	288	30	33.08	4.5229418	20.715
Tunis	118	25	17	298	18	26	4.38469	15.067
Twelve-mile	139	12	26.47	319	06	16.92	4.4663350	18.184
Parks	182	02	06.02	2	02	19.92	4.3066250	12.589
Livingston	206	31	21.60	26	35	33.08	4.4640341	18.088
Corner	253	54	07.88	74	00	25.17	4.3094617	12.671
Tower	273	42	36.93	93	48	33.89	4.2696082	11.560
Downie	357	21	03.77	177	21	29.75	4.4686511	18.281

MADERA, PECOS COUNTY, TEX.

A station of the U. S. Coast and Geodetic Survey. About 20 miles south of Fort Stockton, 2 miles southeast of Elsinore Cattle Co.'s headquarters, half a mile east of Fort Stockton-Marathon road, on southeastern one of the two summits of the Sierra Madre Mountains.

Surface station mark: Standard disk reference mark wedged in a drill hole in outcropping bedrock.

Reference mark: Standard disk reference mark wedged in a drill hole in outcropping bedrock. Reference mark is on southwest edge of ridge, 1 meter lower than station, and about 2 meters above the ground.

[Latitude 30° 35′ 33.588″. Longitude 102° 54′ 47.326″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Divide	5	52	46	185	52	26	4.00607	6.301
Arbuckle	75	32	12	255	23	36	4.44583	17.345
Belding	158	34	07	338	31	45	4.30596	12.569
Rooney	177	23	05.68	357	22	28.88	4.6212431	25.977
Stockton	177	36	38	357	36	11	4.50306	19.788
School	183	56	04	3	56	47	4.51537	20.356
Three-Mile	198	17	53.55	18	21	01.29	4.4926987	19.322
Tunis	213	20	17	33	26	42	4.56135	22.631
Round	224	12	04	44	15	12	4.14865	8.750
Scarboro	231	57	58	52	03	31	4.34314	13.693
McKenzie	245	22	36.78	65	35	50.75	4.6582591	28.288
Downie	283	39	38.25	103	53	15.06	4.6445023	27.406
Tally	311	49	08	131	52	33	4.15879	8.957
Hock	256	11	35	76	21	58	4.52327	20.731
Rachel	278	31	21	98	43	33	4.58635	23.972
Nation (C. & G. S.)	12	57	20.79	192	55	47.84	4.3385909	13.55
Chancellor (C. & G. S.)	123	14	44.44	303	09	27.52	4.2964052	12.29
Pyle (C. & G. S.)	317	42	33.50	137	49	51.56	4.5349776	21.30

MEX, CROCKETT COUNTY, TEX.

About 20 miles southeast of Rankin, near the road running east from Nolke's ranch toward Ozona. The station is on the high part of the mesa at the head of the canyon heading up southwest from an earth tank, which is near the road, about 8 miles east of Nolke's ranch, and just around the northeast point of the big mesa. The station can also be reached by way of the first big canyon that is west of the point of the mesa about 6 miles from Nolke's ranch and heads up south into the mesa, the station being at the head of the first big east fork of the canyon and about 2 miles from the road. The station is on the highest part of the divide between these two canyons, on the northeast edge of a flat-topped rise. A small pile of rocks is centered over the station.

Station mark: An iron bolt cemented in a drill hole in a boulder set flush with the ground.

Signal: A 14-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 01′ 21.06″. Longitude 101° 45′ 12.34″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Murphy	82	53	44.23	262	49	01.54	4.1663369	9.114
Nolke	130	45	06.42	310	40	07.17	4.3068397	12.595
Gunny	177	51	27.96	357	51	15.63	4.2280958	10.506

MITCHELL, TERRELL COUNTY, TEX.

About 45 miles by road northeast of Sanderson, 30 miles southwest of Sheffield, 1.5 miles east of Sanderson-Sheffield road, 3 miles south of Alex. Mitchell's ranch, on highest part of mesa lying east of Sanderson-Sheffield road and between Independence Draw and Dry Creek; station is 700 feet northwest of second gate on dim road leading east from Sanderson-Sheffield road to Mitchell's Dry Creek Mill.

Station mark: Standard bronze tablet cemented in drill hole in rock 10 inches square set flush with ground.

Signal: Cedar tree 12 feet high, with white flag in top, braced with 4 guy wires, and centered over station mark.

[Latitude 30° 29′ 48.99″. Longitude 102° 02′ 53.75″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Center	43	03	07.05	223	01	04.85	3.9740934	5.854
Corder	86	42	47.79	266	37	19.84	4.2371737	10.728
Dean	122	41	50	302	37	08	4.24434	10.907
Windmill	145	16	09.36	325	11	51.03	4.3751464	14.740
Blackstone	205	42	44.83	25	45	20.06	4.2725376	11.638
Oil Derrick	252	04	48	72	12	17	4.39368	15.382
Brown	339	28	36.42	159	30	20.98	4.1966017	9.771

MONTE, IRION COUNTY, TEX.

About 8 miles northeast of Barnhart, about 6 miles northwest of W. M. Nolke's residence, 400 feet north of road running northwest, and on the north end of high ridge in McMullin's pasture; take road east 3.5 miles then the left-hand road to station.

Signal: Cross targets 3 feet square at top of 12-foot observing platform and centered over station mark.

Station mark: Aluminum tablet set in solid rock and referenced as follows: Hole drilled in rock 26.9 feet distant, S. 85° 00′ W.; hole drilled in rock 22.95 feet distant, N. 13° 30′ E.

Theodolite elevated 17 feet and centered over station mark.

[Latitude 31° 11′ 16.30″. Longitude 101° 05′ 40.90″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Barnhart	22	15	32.06	202	13	47.73	4.1499645	8.776
Owens	52	19	54.70	232	15	07.58	4.2693610	11.553
Hobbs	68	34	17	248	32	17	3.82059	4.111
Bar S	113	07	15.35	293	00	47.63	4.3327271	13.368
Ketchum	193	06	06.81	13	07	31.56	4.2795966	11.829
Suggs	234	40	46.61	54	44	29.24	4.1438110	8.653
Bolt	283	31	58.73	103	39	38.25	4.3837553	15.035
Monument	300	12	53.59	120	18	51.90	4.3273798	13.305
Nouges	332	49	49.88	152	52	47.06	4.2992614	12.377

MONUMENT, IRION OR SCHLEICHER COUNTY, TEX.

About 3.5 miles southeast of Monument, a flag station 14.5 miles east of Barnhart, on the Kansas City, Mexico & Orient R. R. The station is in W. M. Nolke's pasture, on ridge covered with cedar brush, at head of big draw running northwest.

Station mark: Aluminum tablet set in stone flush with surface of ground.

Reference marks as follows: Stone marked 1+, 27.0 feet distant, true azimuth 180° 58′; stone marked 2+, 31.4 feet distant, true azimuth 255° 37′; stone marked 3+, 27.0 feet distant, true azimuth 343° 17′.

Signal: A 2 by 4 inch scantling, with cross targets, centered over station mark, and guyed with wire.

[Latitude 31° 05′ 28.52″. Longitude 100° 54′ 08.03″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Nouges	52	56	02.48	232	53	01.93	4.0656116	7.227
Monte	120	18	51.90	300	12	53.59	4.3273798	13.205
Suggs	159	37	05.78	339	34	49.42	4.3012553	12.434
Bolt	225	49	20.33	45	51	01.17	3.8578300	4.479

MURPHY, CROCKETT COUNTY, TEX.

About 16 miles south of Rankin, on a draw heading up from Nolke's ranch past two windmills and a cement-block tank. A road runs south up this draw from the Nolke ranch about 5 miles to an earth tank, the station being about 2 miles farther south, at the head of the west fork of the draw, and on the highest part of the divide in the near vicinity. There is another high part of the divide at the head of the east fork of the draw, to the east of which the divide drops in a lower gap, and which is about 0.75 mile southeast of the station. A small pile of rocks is centered over the station, which is the top of an Indian mound of small rocks, about 2 feet higher than the surrounding ground.

Station mark: Aluminum tablet cemented in a boulder, set flush with top of mound.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over station.

[Latitude 31° 00′ 21.83″. Longitude 101° 54′ 20.98″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Baker	47	37	59.21	227	33	06.05	4.3116886	12.736
Pecos	115	12	13.54	295	05	32.05	4.3579590	14.168
Nolke	176	52	30.32	356	52	14.32	4.1780188	9.362
Mex	262	49	01.54	82	53	44.23	4.1663369	9.114

NATION, PECOS COUNTY, TEX.

A station of the United States Coast and Geodetic Survey. Near Marathon-Fort Stockton road about 15 miles north from Marathon, 1 mile north from the Pumpkin Center schoolhouse, three-fourths of a mile east of the Marathon-Fort Stockton road, on prominent rounded knob at southeast end of range of hills.

Surface station mark: Standard disk station mark wedged in a drill hole in a boulder. Underground station mark: Standard disk station mark wedged in a drill hole.

Reference mark: Standard disk reference mark wedged in a drill hole in a boulder. Reference mark flush with the ground on eastern slope; 1.5 meters lower than station.

[Latitude 30° 24′ 03.421″. Longitude 102° 57′ 50.479″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Horse	19	52	24	199	47	47	4.63747	26.966
Stillwell	22	05	36	202	03	46	4.18982	9.620
Post	48	05	58	227	56	35	4.60365	24.946
Gage	51	25	56	231	14	11	4.68052	29.776
Leonard	71	56	24	251	48	16	4.43368	16.867
Castle	74	35	59	254	24	23	4.58152	23.707
Glass	98	10	02	278	06	49	4.01156	6.381
Talley	233	18	02	53	22	54	4.28980	12.110
Ord (C. & G. S)	71	34	58.88	251	18	17.17	4.7475357	34.74
Chancellor (C. & G. S)	160	00	37.93	339	56	54.99	4.5334195	21.22
Madera (C. & G. S)	192	55	47.84	12	57	20.79	4.3385909	13.55
Pyle (C. & G. S)	278	19	29.89	98	28	19.34	4.4510478	17.56
Brown (C. & G. S)	357	41	30.79	177	41	51.52	4.4365518	16.98

NINE-MILE, CROCKETT COUNTY, TEX.

Is 9 miles south of Barnhart, 500 feet southwest of mile post, 9,250 feet west of Barnhart-Ozona highway, in Owen's pasture.

Signal: A 2 by 4 scantling, with cross targets, centered over station mark, and guyed with wire.

Station mark: Aluminum tablet cemented in stone set in place and referenced as follows: Rock marked +, 22.9 feet distant, true azimuth 177° 56′; rock marked +, 21.91 feet distant, true azimuth 257° 51′.

Theodolite elevated 8 feet.

[Latitude 31° 00′ 32.79″. Longitude 101° 12′ 42.43″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Owens	157	13	52.81	337	12	43.84	3.9618723	5.691
Barnhart	220	48	27.81	40	50	21.10	3.9500161	5.538
Nouges	264	03	08.76	84	09	42.70	4.3093075	12.666

NOLKE, UPTON COUNTY, TEX.

About 6 miles south of Rankin, at the head of the draw running north from the Nolke Ranch, being about 4 miles northwest of the ranch. The station is on the most northeasterly of a series of prominent rises, or humps, on the highest part of the mesa. It can be reached either by way of the draw from Nolke's ranch or from the point where the road from Rankin to Nolke's ranch crosses the divide, thence southwest along the divide about 3 miles to the station. A small pile of rocks is centered over the station, which is about in the center of the top of the hump.

Station mark: Aluminum tablet, cemented in a boulder, set flush with the ground.

Signal: A 20-foot 2 by 4, with cross targets, guyed with wire, and cemented over the station.

[Latitude 31° 08′ 30.34″. Longitude 101° 54′ 51.98″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Pecos	74	55	24.33	254	48	58.07	4.3120707	12.747
King (2)	101	49	17.87	281	41	51.58	4.3679341	14.497
Halff	164	02	29	344	01	22	4.09555	7.743
Cow	196	48	24.85	16	50	32.95	4.3537998	14.032
Gunny	255	56	19.63	76	01	07.19	4.1810473	9.428
Mex	310	40	07.17	130	45	06.42	4.3068397	12.595
Murphy	356	52	14.32	176	52	30.32	4.1780188	9.362

NOUGES, CROCKETT COUNTY, TEX.

Is 11 miles southeast of Barnhart, 1.5 miles southeast of Wm. Nouges's ranch house, in "O 9" pasture near head of big draw running northwest, on top of long flat ridge. To reach station, go through gate on right, follow road to Nouges's house.

Signal: A 2 by 4 scantling with cross targets, guyed with wire, and centered over station mark.

Station mark: Aluminum tablet cemented in rock set in place, and referenced as follows: Stone marked + is 30.39 feet, true azimuth 113° 17′; stone marked + is 30.80 feet, true azimuth 218° 41′.

[Latitude 31° 01′ 40.75″. Longitude 100° 59′ 57.96″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Nine-Mile	84	09	42.70	264	03	08.76	4.3093075	12.666
Barnhart	107	53	22.02	287	48	41.05	4.1811351	9.429
Monte	152	52	47.06	332	49	49.88	4.2992614	12.377
Monument	232	53	01.93	52	56	02.48	4.0656116	7.227

OIL DERRICK, CROCKETT COUNTY, TEX. (Not occupied.)

Is 15 miles south of Sheffield post office, on the Cannon lease. This is a Standard Oil derrick apparently on top or near to top of high mesa on the Cannon holdings. Station not visited, all sights taken to center of derrick.

[Latitude 30° 33′ 55.51″. Longitude 101° 48′ 09.85″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Brown	39	02	34	218	56	48	4.45816	17.845
Mitchell	72	12	17	252	04	48	4.39368	15.382
Blackstone	121	05	30	301	00	35	4.25512	11.181

OWENS, CROCKETT COUNTY, TEX.

Is 8 miles southwest of Barnhart, 1.5 miles south of road from Barnhart to Clint Owens's ranch house, in Owens's pasture on top of low flat-topped ridge.

Signal: A 2 by 4 scantling with cross targets, guyed with wire, and centered over station mark.

Station mark: Aluminum tablet, cemented in rock set in place and referenced as follows: Rock marked + is 30.55 feet distant; rock marked + is 26.95 feet distant.

[Latitude 31° 05′ 07.02″. Longitude 101° 14′ 56.17″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Last	97	33	45	277	30	05	4.05599	7.069
Cox	116	45	47.89	296	41	29.92	4.1705519	9.202
Bar S	165	34	09.58	345	32	29.87	4.3106586	12.706
Hobbs	223	39	39	43	42	20	4.09271	7.692
Monte	232	15	07.58	52	19	54.70	4.2693610	11.553
Barnhart	280	15	43.24	100	18	45.69	3.9787497	5.917
Nine-Mile	337	12	43.84	157	13	52.81	3.9618723	5.691

PARKS, PECOS COUNTY, TEX.

About 12 miles southwest of Girvin, on the large mesa south of the Livingston headquarters ranch. The station is on the point of the mesa east of the big draw running south of the Livingston ranch, and is about 3 miles from the ranch house. It is set on the highest part of this point of the mesa, and is as far south as it is possible to go and still see the top of the small prominent isolated mesa about 5 miles northeast.

Station mark: Aluminum tablet set in the top of a boulder, about 3 inches above the surface of the ground, and covered with a small pile of rocks.

Signal: A 20-foot 2 by 4 scantling with cross targets, guyed with wire, and centered over station.

[Latitude 30° 56′ 44.43″. Longitude 102° 28′ 24.05.″]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
McKenzie	2	02	19.92	182	02	06.02	4.3066250	12.589
Twelve-Mile	95	29	55.16	275	23	30.69	4.2995046	12.384
Girvin	205	59	05	26	00	31	4.00583	6.298
Livingston	244	43	23.56	64	47	21.76	4.1329012	8.438
Shebina	299	32	28	119	38	29	4.33142	13.328
Corner	307	42	50.92	127	48	55.31	4.3776045	14.824
Square	335	13	15	155	15	24	4.20269	9.909

PECOS, UPTON OR CROCKETT COUNTY, TEX.

About 15 miles east and a little north of Girvin, on the middle part of the first big mesa east of Girvin, between the Pecos River and the Kansas City, Mexico & Orient R. R. From the station there is a clear view northeast, and the town of Rankin is visible, approximately N. 50° E., and appears a few degrees to the left of a small high isolated mesa about 2 miles distant. The station is on a low stony rise; there are two

small piles of rock as witness marks in approximate bearings S. 49° 10′ E. and S. 69° 40′ W. from station, and distant 18.3 feet and 20.9 feet, respectively.

Station mark: Aluminum tablet set in the top of a boulder set flush with the ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over the station.

[Latitude 31° 05′ 36.46″ Longitude 102° 07′ 19.38″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Indian	16 31 25.17	196 29 40.03	4.2799091	11.837
Corner	25 26 44.49	205 21 59.20	4.5354817	21.322
Livingston	63 34 11.14	243 27 17.64	4.3757449	14.760
King's Mill	159 21 46	339 19 53	4.22467	10.424
King (2)	163 13 54.39	343 12 54.90	4.0236284	6.561
Halff	223 18 21	43 23 44	4.37732	14.814
Nolke	254 48 58.07	74 55 24.33	4.3120707	12.747
Murphy	295 05 32.05	115 12 13.54	4.3579590	14.168
Baker	346 45 32.77	166 47 20.00	4.3829782	15.008

POST, BREWSTER COUNTY, TEX.

From Marathon south and a little west about 4 miles, and about 1 mile east of old Fort Pena, Colorado, locally known as "The Post." Up over a low rocky hill southeast of the Marathon-Del Norte road.

Station mark: Bronze tablet set in solid rock.

Signal: Cairn of about 5 feet base and 6 feet high, centered over station.

[Latitude 30° 09′ 31.38″. Longitude 103° 16′ 27.14″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Castle	157 21 51	337 19 38	4.25651	11.217
Nation	227 56 35	48 05 58	4.60365	24.946
Horse	312 37 47	132 42 32	4.31416	12.809

RACHEL, PECOS COUNTY, TEX.

About 12 miles west by road from Free post office, 2 miles east from Rachel's headquarters ranch, 2 miles east from Rachel's "South" well in head of Independence Draw.

Station is on north slope of high point of ridge about 0.75 mile south of point on Free-Fort Stockton road where it passes over divide between Free post office and Rachel ranch, near north edge of cedar brush which covers top of ridge, and about 100 feet west from a plain cattle trail running north over top of ridge.

Station mark: Standard bronze tablet cemented in top of rock about 8 inches square and set flush with ground.

Signal: Built of poles and cedar brush wired together, with white flag over top, the whole being about 10 feet high, and braced with four guy wires. Signal centered over station mark.

[Latitude 30° 32′ 25.58″. Longitude 102° 30′ 55.96″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Madera	98 43 33	278 31 21	4.58635	23.972
Hock	157 23 36	337 21 47	4.17149	9.222
McKenzie	187 39 51	7 40 55	4.39619	15.472
Downie	315 08 24	135 10 03	3.82272	4.131

ROCK, IRION COUNTY, TEX.

Is 8 miles northwest of Arden, 2 miles north of road following Middle Concho River, on top of high ridge, at head of big draw which intersects the above-named road 0.5 mile east of Evans's ranch house.

Signal: Two pieces of 2 by 4 scantling nailed together, with cross targets, guyed with wire, and centered over station mark.

Station mark: Aluminum tablet stamped "Texas," cemented in stone set in place, and referenced as follows: Rock marked + distant 30.50 feet, true azimuth 299° 12′; rock marked + distant 31.35 feet, true azimuth 10° 00′.

[Latitude 31° 28′ 21.25″. Longitude 101° 05′ 23.44″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Windmill	38	25	58	218	21	44	4.33243	13.359
Sawyer	60	37	05.27	240	31	27.86	4.2927134	12.192
Irion	243	48	00.97	63	50	32.77	3.9318105	5.311
Ketchum	343	31	01.60	163	32	17.60	4.1329992	8.440

ROONEY, PECOS COUNTY, TEX.

About 7 miles a little west of north of Fort Stockton, about 3 miles west of the Fort Stockton-Grand Falls road, on the highest part of a prominent cone-shaped knob that stands about 100 feet higher than the surrounding flat country. The foot of this knob can be easily reached by auto, by turning off from the Grand Falls road and passing through the old Frank Rooney ranch.

Station mark: Bronze tablet cemented in outcrop of solid rock.

Signal: Cairn about 7 feet high, centered over tablet.

[Latitude 30° 58′ 09.74″. Longitude 102° 55′ 59.20″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Chancellor	25	20	00.32	205	15	18.48	4.5341086	21.255
Twelve-Mile	271	41	06.05	91	48	53.07	4.3820106	14.975
Tunis	297	19	45	117	26	48	4.39235	15.336
Three-Mile	316	21	13.72	136	24	59.43	4.2281858	10.508
Stockton	356	39	02	176	39	13	3.99832	6.190
Madera	357	22	28.88	177	23	05.68	4.6212431.	25.977

ROUND, PECOS COUNTY, TEX.

About 15 miles south and a little east of Fort Stockton, on a flat-topped hill standing alone just northwest of the end of a large mesa running toward the east. The hill is not quite as high as the highest part of the mesa at a point several miles east, known locally as "Round Mountain." Can be reached by road southwest from the Martin ranch, or from the Marathon-Fort Stockton road east past the "Six Shooter" wells.

Station mark: Aluminum tablet cemented in solid rock, on highest part of the hill.

Signal: Cairn about eight feet high centered over tablet.

[Latitude 30° 41′ 01.26″. Longitude 102° 48′ 38.50″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Madera	44	15	12	224	12	04	4.14865	8.750
Chancellor	91	41	22	271	32	56	4.42123	16.390
Three-Mile	179	53	39	359	53	36	4.28843	12.072
Talley	357	21	53	177	22	10	4.29507	12.258

RUSSELL, TERRELL COUNTY, TEX.

Is 20 miles by road north from Sanderson, 7 miles northeast of "41" well on Sanderson-Free road, 3 miles south from Russell's "Big Canyon" ranch in Big Canyon on Sanderson-Free road, on divide between Big Canyon drainage and drainage southeast into Meyer Canyon, on top of high ridge on east side of canyon which opens into Big Canyon, about 1 mile east of Big Canyon ranch, and about 1 mile north from the main head of this canyon. Point on which station is located may be seen from the intersection of Sanderson-Free and Sanderson-Sheffield roads by looking south up canyon and over point of low ridge which runs east from Big Canyon ranch and is about 5 miles distant from this point. Station is best reached from Big Canyon ranch by taking old road leading east along north side of field fence and turning south up first canyon, following this about 2 miles, and turning east to top of ridge. Station is on highest point.

Station mark: Standard bronze tablet cemented in drill hole in solid outcropping rock.

Signal: A 2 by 4 scantling, 14 feet high, with cross targets covered with white and black cloth, braced with four guy wires, and centered over station mark.

[Latitude 30° 20′ 51.62″. Longitude 102° 20′ 13.15″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Sanderson	4	50	36.46	184	50	11.36	4.1978092	9.798
Corder	213	59	25.06	34	02	44.09	4.2730771	11.653
Center	245	33	35.66	65	40	19.57	4.3692453	14.541
King	291	51	54.21	111	57	50.32	4.3078936	12.625
Hen	320	09	14.65	140	15	53.19	4.5194506	20.549

SAWYER, IRION OR REAGAN COUNTY, TEX.

Is 21 miles north of Barnhart, 8 miles north of Bar S headquarters ranch house, 20 miles northeast of road running from Bar S headquarters northwest, on top of high flat ridge in Bar S pasture.

Signal: A 2 by 4 scantling, with cross targets, centered over station mark, and guyed with wire.

Station: Bronze tablet cemented in stone, set in place, and referenced as follows: Rock marked + is 31.70 feet distant, true azimuth 255° 39′; rock marked + is 31.95 feet distant, true azimuth 344° 52′.

[Latitude 31° 23′ 08.23″. Longitude 101° 16′ 10.51″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Bar S	13	03	16.46	193	02	14.97	4.1415669	8.608
Concho	110	30	34.88	290	26	36.12	4.1112824	8.028
Rock	240	31	27.86	60	37	05.27	4.2927134	12.192
Ketchum	279	07	12.57	99	14	05.32	4.3268392	13.188
Windmill	332	31	53	152	33	07	3.90968	5.047

SCARBORO, PECOS COUNTY, TEX.

The station is about 15 miles southeast of Fort Stockton, and about 200 yards northeast of the Fort Stockton-Sanderson road, where the road enters a group of low hills, between two mesa-like points bounded by rim rock. The station is on the highest part of the northeastern of these two points.

Station mark: Aluminum tablet cemented in outcrop of solid rock.

Signal: Low pile of rocks, surmounted by a temporary frame and cloth signal, centered over the tablet.

[Latitude 30° 42′ 54.04″. Longitude 102° 43′ 55.01″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Madera	52 03 31	231 57 58	4.34314	13.693
Three-Mile	154 37 38	334 35 12	4.24703	10.974

SHEBINA, PECOS COUNTY, TEX. (Not occupied.)

About 16 miles southeast of Girvin, about 3 miles southwest of a main-road fork at a cement culvert, where the road from Girvin to Shebina's ranch crosses the Fort Stockton-Sheffield road, on the northeast end of the highest flat-topped hill of a mesa-like ridge.

Station mark: Drill hole in the center of a triangle chiseled in a solid rock.

Signal: Cairn about 8 feet high, centered over the station.

[Latitude 30° 51′ 00.47″. Longitude 102° 16′ 41.73″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Parks	119 38 29	299 32 28	4.33142	13.328
Baker	260 20 17	80 26 55	4.31730	12.902
Corner	357 05 53	177 05 57	3.60460	2.500

SLAUGHTER, PECOS OR TERRELL COUNTY, TEX.

About 10 miles west of Sheffield post office, 5 miles northwest of Blackstone & Slaughter's headquarters ranch, 1 mile north of their "New well," 0.5 mile west of road leading from this well north over divide into Hackberry Canyon, on top of a small knoll on dividing mesa between Hackberry Canyon and canyon in which Blackstone & Slaughter's headquarters ranch is located. Is 200 feet south of an east-west fence line which crosses above-mentioned road about 100 yards north of highest point on divide.

Station is best reached from the south by taking second-class road leading off from Sanderson-Sheffield road at forks of canyon about 1 mile west of Blackstone & Slaughter's headquarters ranch, take right-hand road at "New well" and follow this north over divide to fence then west along fence to station.

Station mark: Standard bronze tablet cemented in solid outcropping rock.

Signal: A 2 by 4 scantling 12 feet high, with cross targets of black and white cloth, braced with four guy wires, and centered over station mark.

[Latitude 30° 42′ 39.05″. Longitude 102° 01′ 15.97″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Independence	9 20 28	189 19 57	3.99249	6.107
Windmill	75 20 51.64	255 15 42.59	4.2216624	10.352
Cedar	113 21 47.14	293 17 07.16	4.2005237	9.860
Blackstone	321 04 50.84	141 06 36.67	3.9440184	5.462

SQUARE, PECOS COUNTY, TEX. (Not occupied.)

About 30 miles east of Fort Stockton, 5 miles southeast of Park's ranch, and 3 miles south of the Fort Stockton-Sheffield road. The station is on the highest part of a north wing of the main mesa, which is the highest point in the vicinity.

Station mark: Bronze tablet driven in the stump of a cedar tree.

Signal: Pile of cedar brush centered over station.

[Latitude 30° 48′ 54.19″. Longitude 102° 24′ 12.59″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Parks	155 15 24	335 13 15	4.20269	9.909
Livingston	195 27 49	15 29 39	4.32295	13.071
Corner	270 34 27	90 38 22	4.08596	7.574

STILES, REAGAN COUNTY, TEX.

Two miles northwest of the town of Stiles, the county seat of Reagan County, and about 0.25 mile west of the Stiles-Grand Falls road. Station is the old unused windmill tower standing at the middle of the north side of an old earth tank, or reservoir.

Station mark: Center of well casing.

Signal: Old windmill tower, centered over the station.

[Latitude 31° 25′ 06.50″. Longitude 101° 34′ 55.77″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Low	19 57 26.51	199 54 34.90	4.4084697	15.915
Fence	83 15 50.30	263 10 35.23	4.2063496	9.993
Concho	267 06 01.20	87 11 48.95	4.2464993	10.961
Japson	346 57 53.11	166 58 55.62	4.1487866	8.753

STOCKTON, PECOS COUNTY, TEX. (Not occupied.)

About 2 miles west of Fort Stockton, on a low flat-topped hill, on the eastern slope of which is a quarry. The point is on the highest part of the eastern side of the hill, just at the upper edge of the quarry. There is a windmill a few hundred feet northeast of the station, whose top is at about the same elevation as the top of the signal, though it stands on much lower ground.

Station mark: Drill hole in the center of a triangle cut in the outcrop of solid rock.

Signal: Cairn about 6 feet high centered over station.

[Latitude 30° 52′ 46.82″. Longitude 102° 55′ 37.29″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Rooney	176 39 13	356 39 02	3.99832	6.190
Three-Mile	281 41 08	101 44 42	4.05404	7.037
Madera	357 36 11	177 36 38	4.50306	19.788

SUGGS, IRION COUNTY, TEX.

Is 18 miles northeast of Barnhart, in Suggs's pasture, 0.8 mile northeast of Suggs's "South Line tank and windmill," on flat-topped short ridge.

Signal: A 2 by 4 scantling, with cross targets, guyed with wire, and centered over station.

Station mark: Aluminum tablet in top of rock, set in place, and referenced as follows: Rock marked + 23.3 feet distant, true azimuth 184° 18′; rock marked + 25.0 feet distant, true azimuth 300° 54′.

[Latitude 31° 15′ 37.52″. Longitude 100° 58′ 31.44″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Monte	54	44	29.24	234	40	46.61	4.1438110	8.653
Ketchum	146	10	14.57	326	07	56.25	4.1016615	7.853
Lopez	232	05	23.74	52	09	13.42	4.1706024	9.203
Bolt	318	29	27.55	138	33	25.08	4.2631553	11.390
Monument	339	34	49.42	159	37	05.78	4.3012553	12.434

TALLEY, PECOS COUNTY, TEX.

About 30 miles south of Fort Stockton and about 2.5 miles southeast of Tom Talley's ranch. The point is on the highest flat-topped hill in the near vicinity, on the northern end of the flat top, overlooking all country to the north.

Station mark: An aluminum tablet cemented in solid rock.

Signal: A piñon tree, with brush piled around its base, and so trimmed as to make a cone-shaped pile. It is distant 15.6 feet from the station, in azimuth 92° 42′ (west of station).

[Latitude 30° 30′ 21.31″. Longitude 102° 48′ 04.48″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Nation	53	22	54	233	18	02	4.28980	12.110
Divide	87	44	37	267	40	53	4.07156	7.327
Madera	131	52	33	311	49	08	4.15879	8.957
Round	177	22	10	357	21	53	4.29507	12.258

THREE-MILE, PECOS COUNTY, TEX.

About 4 miles southeast of Fort Stockton, on the highest part and approximately in the center of "Three-Mile Mesa." The point is about 300 feet from the northwest edge of the mesa, S. 20° E. from the top of a small but prominent disconnected hill that is nearly as high as the main part of the mesa and appears higher as seen from Fort Stockton.

Station mark: Aluminum tablet cemented in a large flat rock lying flush with ground.

Signal: Lumber quadripod, standing about 15 feet high, the upper 8 feet being wrapped with cloth, black above, and white below.

[Latitude 30° 51′ 32.16″. Longitude 102° 48′ 39.87″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Madera	18	21	01.29	198	17	53.55	4.4926987	19.322
Chancellor	54	41	15.20	234	32	49.03	4.5087417	20.049
Belding	58	06	39	238	01	07	4.30566	12.561
Stockton	101	44	42	281	41	08	4.05404	7.037
School	112	49	57	292	47	32	3.91122	5.065
Rooney	136	24	59.43	316	21	13.72	4.2281858	10.508
Twelve-Mile	227	11	10.72	47	15	11.30	4.2290093	10.528
McKenzie	288	30	33.08	108	40	41.95	4.5229418	20.715
Scarboro	334	35	12	154	37	38	4.24703	10.974
Round	359	53	36	179	53	39	4.28843	12.072

TOWER, PECOS COUNTY, TEX.

About 30 miles south of Girvin, and about 4 miles south and west of Shebina's ranch, on the south edge of large mesa forming a main divide. The point is approximately 1.64 miles west of the gate at the summit of the divide through which the road from Shebina's ranch to Will Harral's ranch runs, the gate being in the fence sepa-

rating these two ranches, and about 857 feet south of the fence running west from that gate. There is another fence corner 1.65 miles west of the station. A pile of rocks about 2 feet high is centered over station.

Station mark: Aluminum tablet cemented in a boulder, and set flush with the ground.

Signal: A 20-foot 2 by 4 scantling, with cross targets, guyed with wire, and centered over station.

The theodolite was set on an 8-foot observing tower, making the line of sight about 13 feet above the station, in order to see the signal at "Cedar."

[Latitude 30° 45′ 07.27″. Longitude 102° 17′ 13.10″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Downie	31	30	01.65	211	24	32.05	4.5187990	20.519
Trent	71	40	34	251	36	02	4.17447	9.286
McKenzie	93	48	33.89	273	42	36.93	4.2696082	11.560
Corner	188	36	59.20	8	37	19.20	3.8410218	4.309
Cedar	261	00	06.83	81	03	36.17	4.0422684	6.849
Windmill	313	11	13.68	133	14	13.28	4.1085118	7.977

TRENT, PECOS COUNTY, TEX.

About 35 miles southeast from Fort Stockton, 3 miles north of J. L. Trent's headquarters, 1 mile northeast of Trent's "North" well, and 1 mile east of road leading from Trent's place northward to Fort Stockton road. On south point of high mesa, 0.25 mile west of fence line crossing mesa.

Station may be reached by wagon from Trent's place by taking road leading northward, turning off this road and up first main canyon to the east, and going up this canyon about 1 mile to fence line, which is about 1 mile south of station. By going through fence one can follow up draw to top of mesa.

Station mark: Drill hole in solid and outcropping rock, with triangle cut around it.

Signal: Eight-sided pyramid of poles weighted down at bottom with rocks, and covered with black cloth, with white flag over center, the whole being centered over station mark.

[Latitude 30° 42′ 34.40″. Longitude 102° 26′ 06.23″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Downie	7	22	29	187	21	31	4.37396	14.700
McKenzie	143	30	48	323	29	26	3.86768	4.582
Tower	251	36	02	71	40	34	4.17447	9.286

TUNIS, PECOS COUNTY, TEX.

A three-point station, about 10 miles east of Fort Stockton and about 2 miles south of the Fort Stockton-Sheffield road.

The station is on the highest part of the flat mesa-like ridge, on the longest hill of the ridge, at a point about one-third of the distance from the northeast end of this hill or mesa to the southwest end, and is about 3 miles southwest of the point where the Fort Stockton-Sheffield road crosses the ridge.

Station mark: Aluminum tablet cemented in a large flat rock, flush with the ground. There is a line of rocks about 30 feet long, placed in the form of an arrow, across the open grassy part of the top of the hill, pointing to the station, which is about 25 feet from the point of the arrow.

Signal: A small pile of rocks over the station.

[Latitude 30° 52′ 01.05″. Longitude 102° 42′ 13.90″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Madera	33	26	42	213	20	17	4.56135	22.631
Rooney	117	26	48	297	19	45	4.39235	15.336
McKenzie	298	18	26	118	25	17	4.38469	15.067

TWELVE-MILE, PECOS COUNTY, TEX.

About 12 miles northeast of Fort Stockton, on the highest part of the northwestern end of "Twelve-Mile Mesa," which is the second large mesa from Fort Stockton lying south of the Kansas City, Mexico & Orient R. R. and north of the Fort Stockton-Sheffield road. The station is on a small rocky rise about 4 feet higher than the rest of that part of the mesa.

Station mark: Drill hole in the center of a triangle chiseled in outcrop of solid rock.

Signal: Cairn about 7 feet high, centered over the station.

[Latitude 30° 57′ 45.84″. Longitude 102° 40′ 51.54″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Three-Mile	47	15	11.30	227	11	10.72	4.2290093	10.528
Rooney	91	48	53.07	271	41	06.05	4.3820106	14.975
Livingston	262	59	21.40	83	09	44.43	4.5099118	20.103
Parks	275	23	30.69	95	29	55.16	4.2995046	12.384
McKenzie	319	06	16.92	139	12	26.47	4.4663350	18.184

WINDMILL, TERRELL COUNTY, TEX.

Windmill with cement water tank, known as the Corder "75" well. About 55 miles northeast of Sanderson, about 55 miles southwest of Girvin, 3 miles northwest of the W. H. Corder ranch "51" well, in Independence Draw. On highest part of mesa in this vicinity.

Station may be reached by road from the W. H. Corder place on the southeast or from Arthur Harrol's place on the west.

Reference mark: Bronze tablet cemented in drill hole in cement well base.

Station mark and signal: Windmill tower. The center of tower is 2 feet southeast of station mark.

[Latitude 30° 40′ 21.81″. Longitude 102° 11′ 21.45″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Dean	7	04	45	187	04	34	4.00398	6.271
Corder	10	13	35.40	190	12	24.89	4.3184949	12.937
Free	48	23	28	228	20	11	4.13918	8.561
Downie	54	00	15.27	233	51	47.13	4.5174156	20.453
McKenzie	109	47	38.23	289	38	42.06	4.4722870	18.435
Tower	133	14	13.28	313	11	13.68	4.1085118	7.977
Cedar	188	18	35.42	8	19	04.90	4.0261434	6.599
Slaughter	255	15	42.59	75	20	51.64	4.2216624	10.352
Blackstone	276	49	52.59	96	56	47.13	4.3384336	13.545
Independence	290	36	10	110	40	48	4.19099	9.646
Mitchell	325	11	51.03	145	16	09.36	4.3751464	14.740

WINDMILL, IRION COUNTY, TEX. (Not occupied.)

Station mark: Center of windmill tower.

[Latitude 31° 19′ 14.21″. Longitude 101° 13′ 48.82″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Sawyer	152	33	07	332	31	53	3.90968	5.047
Rock	218	21	44	38	25	58	4.33243	13.359
Ketchum	257	26	04	77	31	43	4.24634	10.957

PRIMARY TRAVERSE.

Anahuac and Liberty quadrangles.

LIBERTY COUNTY.

The following geographic positions were determined in 1916 by D. S. Birkett and W. F. Hicks.

A line was run from Primary Traverse Station 202, 1915, of Harris County work, to U. S. Corps of Engineers' Station 1619, of Trinity River Survey.

Positions are on North American datum.

ANAHUAC QUADRANGLE.

Along highway near northwest corner of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crosby, about 6.3 miles northeast of, on road to Liberty, 125 feet south of Texas & New Orleans R. R., 250 feet west of bridge across Cedar Bayou, 30 feet south of public road and 6 feet north of wire fence; iron post stamped "Prim. Trav. Sta. No. 202, 1915." Elevation 54.666 feet	29 58 14.90	94 59 16.33	.....
Dayton, 6.6 miles southwest of, opposite cattle guard No. 333 B, Texas & New Orleans R. R., on east end of concrete abutment of highway bridge; chiseled square	29 59 16.53	94 57 56.25	9,397
Dayton, 5.7 miles southwest of, opposite trestle 33 A A on Texas & New Orleans R. R., northeast corner of highway bridge, on concrete abutment; chiseled square	29 59 49.04	94 57 13.74	4,971

LIBERTY QUADRANGLE.

Along highways near southwest corner of quadrangle.

Stations.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Dayton, 4.4 miles southwest of, opposite trestle No. 330 Texas & New Orleans R. R., southwest corner of bridge on Dayton-Crosby road, in concrete abutment; bronze tablet stamped "Prim. Trav. Sta. No. 1, 1916"	30 00 31.87	94 56 16.83	6,612
Dayton, 4.1 miles southwest of; crossroads	30 00 58.09	94 55 41.92	4,050
Dayton, 2.5 miles southwest of, 150 feet southeast of trestle No. 329 A Texas & New Orleans R. R., northwest corner of highway bridge; chiseled square	30 01 33.58	94 54 56.04	5,392
Dayton, 1.6 miles southwest of, T road south	30 02 03.90	94 54 16.14	4,653
Dayton, 1.2 miles southwest of, T road northwest	30 02 23.15	94 53 50.69	2,960
Dayton, 0.8 mile southwest of Texas & New Orleans R. R. depot, forks of Houston and Mount Bellview roads, 1,200 feet east of Texas & New Orleans R. R., in north end of concrete culvert; bronze tablet stamped "Prim. Trav. Sta. No. 2, 1916"	30 02 24.28	94 53 36.90	1,213
Dayton, 0.15 mile northeast of Texas & New Orleans R. R. depot, 100 feet northwest of track, on west end of concrete culvert; chiseled square	30 03 00.65	94 53 06.02	4,565
Dayton, 0.5 mile northeast of, fork of Beaumont-Kinefick road	30 03 33.77	94 52 47.21	3,729
Dayton, 0.95 mile northeast of, on Dayton-Liberty road, concrete bridge over Linney Creek, on top of wing wall at southeast corner; chiseled square	30 03 45.07	94 52 25.22	2,240
Liberty bridge over Trinity River, Texas & New Orleans R. R. crossing at west end of	30 03 32.04	94 49 17.46	16,548
U. S. C. E. Prim. Trav. Sta. No. 1619	30 03 38.06	94 49 01.71	1,507

Magnetic declination for south border of quadrangle, 8° 32′ E.

Bobbin and Brenham quadrangles.

WALLER COUNTY.

The following geographic positions were determined in 1916 by D. S. Birkett. A line was run from Primary Traverse Station No. 80, 1915, of Harris County work, to Primary Traverse Station No. 26, 1909, on Brazos River bridge.

Positions are on North American datum.

BOBBIN QUADRANGLE.

Along Houston & Texas Central R. R. near southwest corner of quadrangle. (By D. S. Birkett in 1916.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Waller station, about 1,900 feet southeast of, 47 feet south of Houston & Texas Central R. R., 23 feet southeast of county-line post, 2.5 feet north of fence line; iron post stamped "Prim. Trav. Sta. No. 80, 1915." Elevation 241.632 feet.	30	03	16.48	95	55	16.59	.....
Waller, 0.95 mile west of, southwest corner of bridge No. 41 C on Houston & Texas Central R. R., concrete abutment; chiseled square	30	03	34.45	95	56	29.12	6,623
Waller, 1.5 miles west of, center of bridge 42 C	30	03	42.83	95	57	03.47	3,130
Waller, 1.8 miles west of, road crossing	30	03	46.15	95	57	17.12	1,241
Center of bridge No. 43 A	30	04	02.90	95	58	26.14	6,291
Waller, 4. 2 miles west of, road crossing	30	04	19.53	95	59	34.57	6,239
Prairie View, 0.6 mile east of, on southeast abutment of bridge 45 C; chiseled square	30	04	24.00	95	59	53.92	1,754

BRENHAM QUADRANGLE.

Along Houston & Texas Central R. R. near southeast corner of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Prairie View, 0.2 mile west of, road crossing	30	04	35.89	96	00	41.75	4,366
Prairie View, 0.7 mile west of, seven telephone poles east of milepost 47, west concrete emergency rail stand; chiseled square	30	04	43.30	96	01	12.95	2,838
Prairie View, 2.4 miles west of, Houston & Texas Central R. R. bridge over Clear Creek, southeast corner, in concrete abutment; bronze tablet stamped "Prim. Trav. Sta. No. 4, 1916"	30	05	07.03	96	02	50.58	8,902
Hempstead, 1 mile east of Houston & Texas Central R. R. depot, road crossing	30	05	24.36	96	04	01.80	6,493
Hempstead, front entrance of Waller County court house, in top of limestone balustrade of steps; bronze tablet stamped "Prim. Trav. Sta. No. 5, 1916"	30	05	50.80	96	04	37.48	4,113
Hempstead, 1.7 miles northwest of Houston & Texas Central R. R. depot crossing	30	06	17.05	96	05	33.47	5,583
Hempstead, 1.95 miles west of, culvert No. 1 D, on south end; chiseled square	30	06	24.30	96	06	20.68	4,206
Pointer, 0.5 mile east of, 20 feet south of milepost 3 Houston & Texas Central R. R.; top of steel-rail bench mark	30	06	33.92	96	07	23.36	5,586
Pointer, 0.3 mile west of, road crossing	30	06	42.05	96	08	12.05	4,349
Milepost 5, center of Houston & Texas Central R. R. opposite	30	06	53.43	96	09	21.87	6,235
Harmon, 0.5 mile east of, 30 feet south of Houston & Texas Central R. R., top of short steel rail; railroad engineer's bench mark	30	06	57.78	96	09	51.64	2,647
Houston & Texas Central R. R. bridge over Brazos River, in top of south end of east pier; aluminum tablet stamped "Prim. Trav. Sta. No. 26, 1909, Texas"	30	07	01.30	96	11	22.62	8,081
Bulletin 496 value from the west	30	07	01.60	96	11	23.60	.....

Magnetic declination for southeast corner of quadrangle, 8° 48′ E.

Rosenberg and Sealy quadrangles.

WALLER COUNTY.

Line run by D. S. Birkett in 1916, from Primary Traverse Station No. 47, 1915, along Missouri, Kansas & Texas Ry. to Primary Traverse Station No. 10, 1909.

ROSENBERG QUADRANGLE.

Along Missouri, Kansas & Texas Ry. near center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Katy, 520 feet west of station, 42 feet south of center of track, 4 feet east by 2 feet south of telephone pole; iron post stamped "Prim. Trav. Sta. No. 47, 1915." Elevation 140.984 feet	29	47	08.32	95	49	18.65	.....
Harris County and Waller County line post	29	47	08.90	95	49	57.15	3,394
Katy, 1 mile west of, north end of concrete culvert, Missouri, Kansas & Texas Ry.; chiseled square	29	47	09.12	95	50	21.97	2,187
Katy, 1.5 miles west of, center of bridge No. 1054/1 of Missouri, Kansas & Texas Ry	29	47	09.11	95	50	47.82	2,278
Dorson, center of railroad, opposite signpost	29	47	09.71	95	53	15.20	12,988
Brookshire, 3.2 miles east of, 50 feet north and 80 feet west of milepost 1051, 16 feet west of farm gate at fence line; U. S. C. & G. S. iron post	29	47	10.38	95	54	04.04	4,305
Brookshire, 1.1 miles east of, center of bridge No. 1048/1 of Missouri, Kansas & Texas Ry	29	47	10.40	95	56	10.44	11,139
Brookshire High School, north entrance, concrete steps, on top of west guard rail; chiseled square	29	46	57.33	95	57	10.02	5,414
Brookshire, 2.0 miles west of, center of bridge No. 1045/6	29	46	59.48	95	59	12.50	10,796

Magnetic declination near Brookshire, 8° 45′ E.

SEALY QUADRANGLE.

Along Missouri, Kansas & Texas Ry.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Rogersville flag station, 1.2 miles east of, center of bridge 1044/9	29	46	44.52	96	00	15.16	5,725
Rogersville, 0.4 mile east of, center of bridge 1043/9	29	46	34.04	96	00	59.05	4,010
Rogersville flag station, center of track	29	46	28.98	96	01	20.25	1,937
McDowell, 0.6 mile east of station, south side of track, railroad bridge 1042/5 over Brazos River, in east abutment; aluminum tablet stamped "Prim. Trav. Sta. No. 10, 1909, Texas," also stamped "No. 1"; Bull. 644–P value, Harris County	29	46	17.87	96	02	06.36	4,216
Bull. 496 value	29	46	20.00	96	02	06.60	.....

Armstrong, Harlingen No. 1, Harlingen No. 2, La Sal Vieja, Lopena Island, Padre Island No. 3, Saltillo Ranch, San Ramon, and Tarida Ranch quadrangles.

CAMERON, HIDALGO, AND WILLACY COUNTIES.

During the winter of 1919–20, C. F. Urquhart extended primary-traverse control over parts of the above-named quadrangles. Positions on North American datum are based on Brenner, Raymond, Sauz, Stillman, Norias, Vinson, Topo and Yturria triangulation stations of the U. S. Coast and Geodetic Survey.

HARLINGEN NO. 1 QUADRANGLE.

From Raymond triangulation station east to northeast corner of quadrangle. (By C. F. Urquhart in 1920.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Raymond triangulation station, U. S. Coast and Geodetic Survey, 2.5 miles east of Raymondville, 0.75 mile east of the crossroad at northwest corner of the Raymond Farm, 82 feet north of center of wagon road; station mark is a tablet in top of concrete post. (Elevation by U. S. G. S. 29.691 feet).	26	28	55.78	97	44	20.95	.....
T road north	26	28	55.5	97	43	12.7	6,206
Raymondville, 6 miles east of, 0.25 mile west of J. W. Wilkins's residence; iron post stamped "Prim. Trav. Sta. No. 1." (Elevation 23.417 feet)	26	28	57.00	97	41	16.69	10,537
T road north	26	28	50.3	97	40	18.3	5,350
Opposite dim road north	26	28	50.2	97	39	56.4	1,983
Raymondville, 9 miles east of, at old road north; iron post stamped "Prim. Trav. Sta. No. 2. Elev. 21." (Elevation is 21.215 feet)	26	28	50.14	97	38	21.83	8,597
Center of gate to pasture	26	28	49.8	97	37	46.2	3,240
T road south through gate	26	28	50.1	97	36	29.7	6,945
Mrs. King's pasture gate	26	28	51.2	97	36	00.4	2,665
Mrs. King's Sauz ranch, 1.5 miles west of, at curve in road; iron post stamped "Prim. Trav. Sta. No. 3. Elev. 19." (Elevation is 19.242 feet)	26	29	02.31	97	35	20.86	3,765
Mrs. King's gate, Sauz ranch	26	29	22.3	97	34	05.5	7,134
Sauz ranch, 2 miles east of, on south side of road from Sauz ranch to Fish house on Laguna Madre; iron post stamped "Prim. Trav. Sta. No. 4. Elev. 13, 1920 L." (Elevation is 12.766 feet)	26	29	26.19	97	32	15.34	10,007

Magnetic declination, 9° E.

HARLINGEN NO. 2 QUADRANGLE.

Along highways near north border of quadrangle. (By C. F. Urquhart, in 1919–20.)

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Crossroads	26	29	10.3	97	57	33.2	.....
Raymondville, 12 miles west of, inside of fence at gate on north side of road opposite Mr. Steaven's residence; iron post stamped "Prim. Trav. Sta. No. 26, 1919"	26	29	21.55	97	58	49.68	7,045
From Raymondville west to Steavens ranch.							
Crossroads	26	29	46.0	97	46	51.6	.....
Do	26	28	53.2	97	47	51.6	.....
T road north-south	26	28	52.7	97	48	49.4	5,248
Raymondville, 3 miles west of; iron post stamped "Prim. Trav. Sta. No. 23, 1919. Elev. 40." (Elevation is 36.443 feet)	26	28	46.17	97	48	49.02	653
Road north	26	28	45.9	97	40	46.2	10,650
Brenner, U. S. Coast and Geodetic Survey station, about 5 miles west of Raymondville, 0.25 mile west of the Cameron-Hidalgo county line, 246 feet north of center of wagon road leading west from Raymondville, near the center of a small cleared but uncultivated field belonging to J. P. Brenner, of Raymondville. (Elevation by U. S. G. S. is 36.194)	26	28	48.07	97	51	58.09	6,528
Road opposite Thompson's gate	26	28	41.6	97	53	34.2	8,757
Road north at gate	26	28	40.2	97	54	00.3	2,376
Raymondville, 9 miles west of, inside fence on south side of road; iron post stamped "Prim. Trav. Sta. No. 25, 1919. Elev. 44." (Elevation is 43.799 feet)	26	28	48.17	97	55	02.36	5,693
Road north to J. A. Jonas ranch	26	29	10.3	97	57	33.2	13,849
Prim. Trav. Sta. No. 26 (previously described)	26	29	21.55	97	58	49.68	7,036

Magnetic declination, 9° 10′ E.

Near Brenner triangulation station.

Crossroads	26	29	47.8	97	50	46.5	.....
T road north	26	28	45.9	97	50	46.2	6,240
Center of road at gate	26	28	45.8	97	51	37.7	4,670
Brenner triangulation station (previously described)	26	28	48.07	97	51	58.09	1,869

SALTILLO RANCH QUADRANGLE.

West along highway near south border of quadrangle.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
San Jose ranch, at southeast corner of corral barn; iron post stamped "Prim. Trav. Sta. No. 12. Elev. 35, 1920 L." (Elevation is 35.180 feet)	26 45 00.11	97 34 02.06	.....
San Jose ranch, 3 miles west of, on north side of telephone road from San Jose ranch to Norias; iron post stamped "Prim. Trav. Sta. No. 13. Elev. 27, 1920 L." (Elevation is 26.875 feet)	26 45 17.55	97 36 47.79	.....
Stake on south side of road	26 45 34.3	97 37 55.6	6,378
San Jose ranch, 6 miles west of, on south side of telephone road; iron post stamped "Prim. Trav. Sta. No. 14. Elev. 21, 1920 L." (Elevation is 20.718 feet)	26 46 00.0	97 39 38.2	9,658
Stake at station on north side of road	26 46 15.0	97 40 37.8	5,609
Curve in road at wire fence stake	26 46 29.3	97 41 34.2	5,309
Norias, 4.5 miles east of, opposite Santillo ranch on San Jose-Norias road; iron post stamped "Prim. Trav. Sta. No. 15. Elev. 29, 1920 L." (Elevation is 29.351 feet)	26 46 36.90	97 42 28.39	4,971
On south side of road, stake	26 46 53.1	97 43 14.7	4,509
Noria's pasture gate	26 47 04.4	97 43 41.8	2,705
On north side of road, stake at station 378	26 47 21.5	97 44 34.5	5,076

Magnetic declination, 9° 05′ E.

ARMSTRONG QUADRANGLE.

Near southeast corner of quadrangle. (By C. F. Urquhart in 1919–20.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
On north side of road, stake at station 587	26 47 22.8	97 45 27.3	4,793
Noria's ranch residence, at northeast corner of fence, west side of track, St. Louis, Brownsville & Mexico R. R.; iron post stamped "Prim. Trav. Sta. No. 16. Elev. 20." (Elevation is 19.826 feet)	26 47 09.28	97 46 32.27	6,042
Stake, 500 feet west of road	26 46 47.1	97 48 21.8	.....
Norias, 3 miles west of, 600 feet west of small pond, 30 feet north of east-west road; iron post stamped "Prim. Trav. Sta. No. 30. Elev. 31." (Elevation is 30.883 feet)	26 46 15.06	97 49 30.31	6,996
Stake painted white, 400 feet north of road	26 45 57.8	97 50 24.6	5,220
Center line of road, at gate	26 45 50.9	97 50 57.9	3,095
Stake painted white, 200 feet north of wagon road	26 45 40.4	97 51 49.5	4,795
Vinson, about 7 miles from Norias railroad station, azimuth 252° 48′ 31″ from the large white house about 50 meters (160 feet) north of the section house there, about 46 meters (151 feet) north of the plain wagon road leading west from Norias, near the center of a rounded prominent bare knoll. (Elevation is 57.100 feet)	26 45 25.01	97 52 46.26	5,376
Painted stake, 200 feet south of wagon road	26 45 01.5	97 53 39.3	5,364

Magnetic declination, 9° 08′ E.

North along St. Louis, Brownsville & Mexico R. R., in east part of quadrangle

Milepost 66	26 45 50.7	97 46 19.8	.....
Norias, road crossing	26 47 08.2	97 46 32.0	7,903
Noria's, at northeast corner of fence around ranch; iron post stamped "Prim. Trav. Sta. No. 16. Elev. 20". (Elevation is 19.826 feet)	26 47 09.28	97 46 32.27	107

Magnetic declination, 9° 00′ E.

LOPENA ISLAND QUADRANGLE.

Near southwest corner of quadrangle. (By C. F. Urquhart in 1919–20.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Topo, on a small island near the west shore of Laguna Madre, connected at low tide with the mainland to the south by a narrow strip of land, about 23 feet north of the south shore and about 164 feet east of the west shore of the island, which is about 10 feet above the water. C. & G. S. triangulation station	26 45 17.92	97 28 19.33	.....

PADRE ISLAND NO. 3 QUADRANGLE.

Near southwest part of quadrangle. (By C. F. Urquhart in 1919–20.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
On south side of road from Sauz ranch to Fish house; 0.25 mile east of two windmills at an inclosed tank with cane growing around it; iron post stamped "Prim. Trav. Sta. No. 5. Elev. 13, 1920 L". (Elevation is 12.738 feet)	26 31 24.97	97 28 46.18	.....
At curve in road near a rather clear lake, road turns east	26 30 59.6	97 27 22.7	7,991
Fish house, 0.75 mile west of, near a lone bunch of brush, on small bridge	26 32 37.9	97 27 19.5	11,470
Sauz, U. S. Coast and Geodetic Survey triangulation station, located on a high ridge about 1.5 miles south of Sauz fish house. It is near a cattle trail and about 12 meters (39 feet) from the steep shore bank. Station is marked by a tablet in a concrete post and stamped "11 1920 L by U. S. G. S.". (Elevation is 10.598 feet)	26 32 16.01	97 25 13.53	6,371

Magnetic declination, 8° 50′ E.

LA SAL VIEJA QUADRANGLE.

Near northwest corner of quadrangle. (By C. F. Urquhart in 1919–20.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Painted stake 50 feet south of wagon road	26 44 42.9	97 54 33.1	.....
Norias, 10 miles west of, 15 feet north of wagon road west to the Andreas ranch; iron post stamped "Prim. Trav. Sta. No. 31, 1919. Elev. 39." (Elevation is 38.583 feet.)	26 44 31.43	97 55 40.41	6,208
Stake painted white, 200 feet north of road	26 44 23.4	97 57 52.6	6,598
Stake painted white, 100 feet north of road	26 44 14.3	97 57 44.1	4,759
Norias, 14.5 miles west of, at road forks 0.25 mile east of Andreas ranch; iron post stamped "Prim. Trav. Sta. No. 32 1919. Elev. 47." (Elevation is 46.836 feet.)	26 44 01.76	97 59 02.17	7,190
South near west border of quadrangle.			
Center of road north, at gate in front of Andreas ranch house	26 43 59.6	97 59 17.5	1,405
Painted stake 20 feet east of road	26 43 03.0	97 59 43.7	6,188
Station 851, at point 18 feet south and 6 feet west of corner fence post of north and east fence lines (in San Ramon quadrangle)	26 42 12.3	98 00 08.1	5,577
Stake painted white	26 41 34.3	97 59 23.3	5,590
Andreas ranch, 3 miles south of; iron post stamped "Prim. Trav. Sta. No. 33, 1919. Elev. 48." (Elevation is 48.181 feet).	26 41 07.82	97 59 20.95	2,683
Painted stake	26 40 17.1	97 59 53.4	5,909
Painted stake, 8 feet north of fence line; 75 feet east of corner of fences south and east (in San Ramon quadrangle)	26 39 26.0	98 00 01.3	5,198
Station 866, 4 feet north and 6 feet east of painted cross nailed on fence post	26 39 05.0	97 58 47.2	7,050
T south in fence line	26 38 46.5	97 57 41.8	6,220
San Jose ranch, at northeast fence corner in front of white painted cottage; iron post stamped "Prim. Trav. Sta. No. 34, 1919. Elev. 49." (Elevation is 49.328)	26 37 38.00	97 58 02.66	7,171

LA SAL VIEJA QUADRANGLE—Continued.

South near west border of quadrangle—Continued.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Station 882, at point 10 feet west of large corner fence post, on northeast side of road, at T road to southwest elbow in road.	26	37	16.5	97	57	20.2	4,429
Hub, 8 feet west of center of road, 16 feet west of fence post with board painted white	26	36	05.9	97	57	31.5	7,195
Point 6 feet west of center of road, 15 feet east of fence post having white board nailed to it	26	35	10.1	97	57	40.7	5,700

Magnetic declination, 9° 15′ E.

Stillman's ranch, 5 miles northwest of, in southwest fence corner at T road north; iron post stamped "Prim. Trav. Sta. No. 35, 1919. Elev. 50." (Elevation is 49.947 feet)	26	34	26.89	97	57	48.02	4,413
Gate marked U. S. B. M. 46.4	26	34	07.3	97	58	05.9	2,558
T road west	26	33	48.2	97	58	07.6	1,940
Center of road at tree marked "T. B. M."	26	33	17.5	97	58	09.2	3,097
Y road southwest at elevation painted "46.9"	26	32	58.0	97	58	16.4	2,075
Center of road opposite T. B. M. 44.5	26	32	34.8	97	58	06.7	2,502
Center of road at gate, elevation 36.1	26	32	00.5	97	57	53.4	3,666
Stillman's ranch, 5 miles west and 3 miles south of, at old road forks, 15 feet east of road; iron post stamped "Prim. Trav. Sta. No. 36 W, 1920. Elev. 44." (Elevation is 44.133 feet)	26	31	44.36	97	57	50.27	1,658
Cross roads at elevation 45.3	26	31	09.2	97	57	43.6	3,602
Center of road opposite B. M., elevation 42.0	26	30	00.6	97	57	33.9	6,979

From Stillman triangulation station south to Brenner triangulation station.

Stillman, U. S. Coast and Geodetic Survey triangulation station. (Elevation is 48.301)	26	36	57.74	97	54	00.17	.....
Painted stake 3 feet east of road	26	35	54.4	97	53	53.1	6,427
Stillman ranch, 10 feet north of red gate, 400 feet west of group of white ranch houses; iron post stamped "Prim. Trav. Sta. No. 40, 1919. Elev. 46." (Elevation is 45.680 feet.)	26	34	13.86	97	53	49.60	4,150
Center of road opposite gate	26	33	46.9	97	53	08.6	4,616
Crossroads between two gates	26	32	52.1	97	52	15.1	7,359
Center of road at gate	26	31	37.6	97	51	13.4	9,380
Stillman ranch, 4.2 miles southeast of, 10 feet north and 20 feet east of T road south; iron post stamped "Prim. Trav. Sta. No. 41, 1920. Elev. 34." (Elevation is 34.276 feet)	26	31	37.81	97	50	46.82	2,431
Crossroads	26	30	37.6	97	50	46.6	6,080

Magnetic declination, 9° E.

From Stillman triangulation station to Vinson triangulation station.

Stillman, Coast and Geodetic Survey triangulation station (previously described)	26	36	57.74	97	54	00.17	.....
Pump under windmill	26	37	56.6	97	54	10.8	6,016
Road forks	26	38	09.7	97	54	25.4	1,868
Gate	26	38	24.9	97	54	34.8	1,756
Do	26	38	53.2	97	54	35.4	2,851
Do	26	39	24.7	97	54	36.0	3,179
Stillman ranch, 6.5 miles northwest of, 4 feet east of fence, 600 feet south of windmill; iron post stamped "Prim. Trav. Sta. No. 42, 1919. Elev. 39." (Elevation is 39.254 feet)	26	40	04.00	97	54	36.77	3,971
Pipe of flowing well	26	41	30.1	97	54	38.0	8,691
White painted stake nailed on fence post	26	42	20.0	97	54	39.2	5,040
Stillman ranch, 11.5 miles northwest of, 3 feet south and 3 feet east of corner at T south in the east-west fence on boundary between Stillman and King pastures; iron post stamped "Prim. Trav. Sta. No. 43, 1919. Elev. 38." (Elevation is 38.256 feet)	26	43	27.03	97	54	40.39	6,763
White painted stake	26	44	18.4	97	54	09.0	5,914
Do	26	44	50.1	97	53	30.4	4,742
Vinson, about 7 miles from Norias railroad station, in azimuth 252° 48′ 31″ from the large white house about 164 feet north of the section house there, about 151 feet north of the plain wagon road leading west from Norias, near the center of a rounded prominent bare knoll. Elev. 57.100 feet	26	45	25.01	97	52	46.26	5,330

Magnetic declination, 9° 20′ E.

LA SAL VIEJA QUADRANGLE—Continued.

From Primary Traverse Station No, 35 east to Primary Traverse Station No. 40.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Prim. Trav. Sta. No. 35 (previously described)	26	34	26.89	97	57	48.02	
Gate	26	34	25.8	97	57	36.3	1,071
Gate at elevation 55.2 feet	26	34	26.2	97	56	27.7	6,225
Wire fence on side of road, opposite tree marked "U. S. P. B. M. 50.3"	26	34	30.3	97	55	40.0	4,350
Gate painted 51.4 feet, in ⊤ fence north	26	34	25.8	97	54	48.5	4,700
Prim. Trav. Sta. No. 40 (previously described)	26	34	13.86	97	53	49.60	5,482

Magnetic declination, 9° 15′ E.

North along St. Louis, Brownsville & Mexico R. R. in east part of quadrangle.

Milepost 48	26	30	12.7	97	46	47.9	
Road crossing	26	30	38.9	97	46	44.2	2,670
Milepost 49	26	31	04.8	97	46	40.6	2,635
Raymondville, 3 miles north of, at red gate on east side of track; iron post stamped "Prim. Trav. Sta. No. 22. Elev. 37." (Elevation is 36.907 feet)	26	31	33.50	97	46	36.08	2,921
Milepost 50	26	31	55.4	97	46	33.5	2,226
Milepost 51	26	32	51.9	97	46	25.7	5,740
Milepost 52	26	33	44.0	97	46	18.4	5,300
Yturria, opposite south entrance to station	26	34	05.2	97	46	15.4	2,162
Yturria, 0.25 mile north of, at gate east of track; iron post stamped "Prim. Trav. Sta. No. 21. Elev. 40." (Elevation is 40.151 feet)	26	34	19.86	97	46	12.85	1,496
Road crossing	26	34	19.8	97	46	13.4	53
Milepost 53	26	34	32.2	97	46	11.7	1,270
Milepost 54	26	35	24.2	97	46	04.5	5,290
Milepost 55	26	36	16.5	97	46	02.3	5,282
Milepost 56, 12 feet south of; iron post stamped "Prim. Trav. Sta. No. 20"	26	37	08.87	97	46	03.76	5,284
Road crossing	26	37	20.0	97	46	03.6	1,123
Milepost 57	26	37	59.9	97	46	04.4	4,030
Milepost 58	26	38	53.3	97	46	05.5	5,386
Road crossing	26	39	15.3	97	46	05.9	2,224
Milepost 59, 10 feet south of; iron post stamped "Prim. Trav. Sta. No. 19"	26	39	49.28	97	46	07.05	3,432
Milepost 60	26	40	37.5	97	46	07.60	4,868
Randolph, track opposite water tank	26	41	10.8	97	46	08.3	3,360
Milepost 61	26	41	33.7	97	46	08.7	2,315
Milepost 62	26	42	24.0	97	46	09.8	5,071
Milepost 62, 290 feet north of, opposite telegraph pole; iron post stamped "Prim. Trav. Sta. No. 18"	26	42	26.82	97	46	10.26	292
Milepost 63	26	43	15.1	97	46	10.8	4,871
Milepost 64	26	44	07.4	97	46	11.9	5,284
Norias, U. S. Coast and Geodetic Survey triangulation station, about 3 miles south from Norias railroad station, between mileposts 64 and 65, 200 meters east of tracks, in King's pastures, on a knoll covered with various kinds of bushes	26	44	29.14	97	46	02.32	2,361
Road crossing	26	44	54.8	97	46	12.9	2,763
Milepost 65, 14 feet south of	26	44	59.9	97	46	13.5	513

Magnetic declination, 9° 00′ E.

Near milepost 60.

Road crossing	26	40	48.5	97	46	07.9	

From Primary Traverse Station No. 44 west to Yturria triangulation station.

Prim. Trav. Sta. No. 44 (later described)	26	36	42.30	97	43	23.90	
Yturria, U. S. Coast and Geodetic Survey triangulation station, in the Yturria pastures, about 3.5 miles east of north from the Yturria railroad station, 5 miles east of south from Rudolph railroad station in azimuth 170° 05′ 49″ from the water tank about midway between mileposts 55 and 56	26	36	45.56	97	45	17.09	10,278

SAN RAMON QUADRANGLE.

Near east border of quadrangle (on unchecked spur line). (By C. F. Urquhart in 1919–20.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Painted stake near west edge of road	26 45 22.0	98 00 09.1	.....
Andreas ranch, 3 miles north of, 20 feet east of road; iron post stamped "Prim. Trav. Sta. No. 37"	26 46 22.04	98 00 26.75	.....

Magnetic declination, 9° 15′ E.

TARIDA RANCH QUADRANGLE.

North near east border of quadrangle. (By C. F. Urquhart in 1919–20.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
On road to Tarida ranch, 1.75 miles east from Sauz ranch at T in fence; iron post stamped "Prim. Trav. Sta. No. 6, 1919. Elev. 15, 1920 L." (Elevation is 15.479 feet)	26 30 48.85	97 33 07.13	.....
Center of road, opposite gate to Corica ranch	26 31 32.0	97 33 07.4	4,360
Road forks to ranch	26 32 04.7	97 32 52.2	3,574
At crossroads along telephone line to Tarida ranch, about 5.5 miles northeast of Sauz ranch; iron post stamped "Prim. Trav. Sta. No. 7, 1919. Elev. 17, 1920 L." (Elevation is 17.520 feet)	26 33 34.95	97 33 18.58	9,421
Stake, west side of road	26 34 15.0	97 33 47.5	4,822
Stake, 250 feet west of road	26 35 05.3	97 34 16.6	5,722
West side of road; iron post stamped "Prim. Trav. Sta. No. 8 1919. Elev. 19, 1920 L." (Elevation is 18.776 feet)	26 36 09.97	97 34 19.87	6,537
Stake, 100 feet west of road	26 36 53.6	97 34 03.7	4,645
Stake, 100 feet west of road, limb cut from mesquite	26 38 00.00	97 34 12.8	6,745
Tarida ranch gate, 1.5 miles south of, 700 feet south of sand hill, west side of road; iron post stamped "Prim. Trav. Sta. No. 9, 1919. Elev. 25, 1920 L." (Elevation is 25.540 feet)	26 38 29.02	97 34 08.25	2,964
Stake on west side of road	26 39 14.6	97 34 31.5	5,066
Wire fence, 12 feet east of gate entering Tarida ranch	26 39 30.8	97 34 12.2	2,397
Center of gate	26 39 39.5	97 34 09.6	904
West side of road; iron post stamped; "Prim. Trav. Sta. No. 10, 1919. Elev. 27, 1920 L." (Elevation is 27.175 feet)	26 40 59.35	97 34 23.26	8,155
On west side of road, stake	26 41 50.22	97 34 17.2	5,164
On west side of road, stake	26 42 43.3	97 34 21.0	5,373
San Jose ranch, 2 miles south of, 40 feet east of road, 23 feet southwest of blazed oak tree; iron post stamped "Prim. Trav. Sta. No. 11, 1919. Elev. 28, 1920 L." (Elevation is 30.950 feet)	26 43 27.2	97 34 09.0	4,564
Stake at Station 486	26 44 13.1	97 34 04.7	4,650
San Jose ranch at southeast corner of corral barn; iron post stamped "Prim. Trav. Sta. No. 12, 1919. Elev. 32, 1920 L." (Elevation is 35.180 feet)	26 45 00.11	97 34 02.06	4,750
On road from San Jose ranch to Norias, center line of road, at wire gate	26 44 59.4	97 35 11.9	6,329

Near northeast corner of quadrangle.

21st fence post north of gate, in pasture, fence east of San Jose ranch	26 44 32.6	97 32 54.2	.....
On road from San Jose ranch to Nado windmill, 3 miles from San Jose; iron post stamped "Prim. Trav. Sta. No. 24." No elevation determined	26 44 06.82	97 31 29.75	8,062

Magnetic declination, 9° 00′ E.

TARIDA RANCH QUADRANGLE—Continued.

Southeast through center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	*Feet.*
Center of road, at red gate under telephone line	26	38	48.4	97	44	39.9	.....
Center of road, 15 feet south of mountain edge	26	37	50.9	97	44	04.3	6,639
Gate	26	37	20.9	97	43	47.3	3,403
Puente Del Monte ranch, at southwest corner of picket fence around main front of house; iron post stamped "Prim. Trav. Sta. No. 44, 1920. Elev. 24, 1919." (Elevation is 24.527 feet).	26	36	42.30	97	43	23.90	4,433
Gate	26	35	59.7	97	43	16.1	4,359
Gate at ⊤ west in fence line	26	35	01.4	97	40	21.0	16,945
Puente Del Monte ranch, 4.4 miles southeast of, 10 feet south and 10 feet east of ⊤ road east on Cameron-Willacy county line; iron post stamped "Prim. Trav. Sta. No. 45, 1920. Elev. 22, 1918 L." (Elevation is 21.728 feet)	26	34	40.75	97	40	20.77	2,084
County-line post No. 12, T. B. M. 21.2 feet. (Elevation is 21.20 feet	26	34	41.0	97	40	05.2	1,410
Gate	26	34	41.3	97	39	43.7	1,960
T. B. M. painted 18.7 feet. (Elevation is 18.76 feet)	26	34	41.6	97	39	20.7	2,090
Post No. 14 on Cameron-Willacy county line	26	34	42.4	97	38	08.8	6,530
Puente Del Monte ranch, 8.5 miles southeast of, 2 feet west of milepost 15, on county line, in concrete cylinder post; B. M. tablet stamped "Prim. Trav. Sta. No. 46, 1920. Elev. 16, 1919 L." (Elevation is 16.675 feet)	26	34	43.01	97	37	09.07	5,421
Post No. 17 on Cameron-Willacy county line	26	34	44.4	97	35	12.7	10,568
Post No. 18 on Cameron-Willacy county line	26	34	45.0	97	34	14.5	5,283
Road crossing on county line	26	34	45.2	97	34	00.8	1,250
Station 1,481 is station 176 on line from Sauz ranch to Norias	26	35	05.30	97	34	16.59	2,487

Magnetic declination, 9° 10′ E.

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TARIDA RANCH QUADRANGLE—Continued.

Southwest through center of quadrangle.

Station.	Latitude.			Longitude.			Distance between stations.
	°	′	″	°	′	″	Feet.
Center of road, at red gate under telephone line	39	38	49.4	97	44	30.0	
Center of road, 1.7 feet south of mountain edge	39	37	36.8	97	44	01.3	3,659
Cairn	39	37	20.6	97	43	47.3	3,463
Pinnacle Del Monte ranch, at southwest corner of picket fence around main front of house; iron pipe stamped "Trin. Trav. Sta. No. 11, 1920. Elev. 24, 1919." (Elevation is 21.32? feet).							
Cairn	39	36	42.30	97	43	23.80	4,023
Cairn	39	35	58.7	97	43	16.1	1,730
Cairn	39	35	01.4	97	40	21.0	10,915
Pinnacle Del Monte ranch, 4.4 miles southeast of, 10 feet south and 10 feet east of T road east on Cameron-Willacy county line; iron pipe stamped "Trin. Trav. Sta. No. 13, 1920. Elev. 22, 1918 L." (Elevation is 21.72? feet).							
County line post No. 12, T. B. M. 21.20?	39	34	09.76	97	40	20.77	2,964
Cairn							
Cairn	39	34	11.0	97	40	05.2	1,410
T. B. M. painted 15.7 feet. (Elevation is 15.75 feet)	39	34	11.3	97	39	49.7	1,380
Post No. 14 on Cameron-Willacy county line	39	34	11.6	97	39	39.7	1,080
Pinnacle Del Monte ranch, 5.5 miles southeast of, 2 feet west of milepost 12, on county line, in concrete cylinder post: R. M. stamped "Trin. Trav. Sta. No. 16, 1920. Elev. 16, 1919 L." (Elevation is 16.67? feet)	39	34	12.4	97	38	08.8	4,389
Post No. 17 on Cameron-Willacy county line	39	34	12.01	97	37	09.07	3,491
Post No. 18 on Cameron-Willacy county line	39	34	11.4	97	36	52.7	1,585
Road crossing on county line	39	34	10.0	97	34	11.3	5,329
Station 1,421 is station 178 on line from Sour Lake to Nordyke.	39	34	10.2	97	34	00.3	1,329
	39	33	09.30	97	34	10.38	2,187

NORTH CAROLINA.

PRIMARY TRAVERSE.

CAMP BRAGG ARTILLERY FIELD.

Argyle, Buckhorn, Fayetteville, Southern Pines, and Stedman quadrangles.

CUMBERLAND, HOKE, AND MOORE COUNTIES.

The following positions were determined by primary traverse which was run by E. L. McNair, P. W. McMillen, and L. F. Biggs in 1918 and 1919. The work was originally started from and based on United States Geological Survey iron post No. 25, 1905 (Kendall), at Hayne. It follows the Atlantic Coast Line Railroad to Fayetteville thence runs by various roads, trails, and lines cut through brush and timber to the Camp Bragg Artillery Field.

Connection was made near Aberdeen and Southern Pines with 8 stations of the United States Coast and Geodetic Survey precise-traverse line. According to values on approximate North American datum, received on August 9, 1919, the United States Coast and Geodetic Survey values were 0.28″ greater in latitude and 3.45″ greater in longitude, and these corrections have been applied to reduce the original Geological Survey values to approximate North American datum.

The Camp Bragg maps, scale 1:10,000, were projected on the old datum.

ARGYLE QUADRANGLE.

Along highways. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Copper nail in root of wild-cherry tree, painted "U. S. P. T. 6"	35 06 41.74	79 00 09.75	2,398
Copper nail in root of gum tree, 20 feet south of second-class cross-road, painted "U. S. P. T. 7"	35 06 56.38	79 00 45.87	3,347
Copper nail in root of persimmon tree, 12 feet northeast of road, painted "U. S. P. T. 8"	35 07 14.14	79 01 14.47	2,980
Fayetteville, 10 miles northwest of, 200 feet west of 10-mile post, 15 feet south of road; iron post stamped "Prim. Trav. Sta. No. 8, 1918, Mac. Elev. 322 feet"	35 07 16.57	79 01 43.81	2,450
Copper nail in end of log, 40 feet west of road to north, 25 feet west of mail box, painted "U. S. P. T. 9"	35 07 24.19	79 02 19.45	3,060
Copper nail in root of oak stump, 12 feet west and 10 feet south of T road south, at 5 mail boxes, 3 feet east of pine tree, painted "U. S. P. T. 10"	35 07 23.34	79 02 46.08	2,215
Copper nail in root of oak tree, near house on north side of road, 10 feet northeast of road, 3 feet south of tree, painted "U. S. P. T. 11"	35 07 41.27	79 03 18.21	3,226
Fayetteville, 12 miles northwest of, 15 feet north of road, 15 feet west of pine tree, painted "U. S. P. B. M."; iron post stamped "Prim. Trav. Sta. No. 9, 1918, Mac. Elev. 354" feet	35 07 50.08	79 03 27.25	1,162
Copper nail in hub, 1 foot north of large sycamore tree, painted "U. S. P. T. 12"	35 08 00.86	79 03 55.48	2,587

ARGYLE QUADRANGLE—Continued.

Along highways. (By E. L. McNair in 1918.)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Copper nail in root of small sycamore tree, painted "U. S. P. T. 13"	35 08 05.59	79 04 33.16	3,167
Copper nail in top of pine stump, 12 feet north of road, 18 feet south of pine tree, painted "U. S. P. T. 14"	35 08 05.40	79 05 06.77	2,792
Cumberland-Hoke county line, 1.1 miles east of, 18 feet north of road, in edge of woods, 10 feet west of oak tree, painted "U. S. P. B. M."; iron post stamped "Prim. Trav. Sta. No. 10, Mac. Elev. 360 feet"	35 08 06.07	79 05 32.34	2,124
Copper nail in top of oak stump, 15 feet north of road, 2 feet southwest of oak tree, painted "U. S. P. T. 15"	35 07 51.18	79 06 04.74	3,084
Copper nail in root of oak tree, 15 feet northwest of crossroads, tree painted "U. S. P. T. 16"	35 07 30.24	79 06 27.64	2,846
Copper nail in root of pine stump, 8 feet southwest of road, 6 feet west of gum tree, painted "U. S. P. T. 17"	35 07 20.87	79 06 56.14	2,551
Cumberland-Hoke county line, edge of field, on bank of creek, 900 feet distant from A. McFadyen's house; rough stone post 7 inches square, projecting 8 inches above surface	35 07 32.26	79 06 47.88	.....
Longstreet Church, 240 feet east of, 20 feet north of road; iron post stamped "Prim. Trav. Sta. No. 11, 1918, Mac. Elev. 388 feet." Azimuth to pointed top of Graham monument in cemetery, 450 feet distant, 87° 02′ 15″	35 07 19.02	79 07 10.51	.....
Copper nail in root of dogwood tree, 8 feet east of road, 0.5 mile north of Longstreet Church, painted "U. S. P. T. 18"	35 07 44.94	79 07 10.19	2,621
Crossroads	35 07 59.62	79 06 60.59	1,685
Longstreet Church, 1 mile north of, 15 feet west of road, in root of pine stump, painted "U. S. P. T. 19"; copper nail	35 08 11.09	79 06 58.67	1,170
Longstreet Church, 1.7 miles north of, 1,000 feet northeast of negro cabin, 6 feet west of road, tree on east side of road is painted "U. S. P. B. M."; iron post stamped "Prim. Trav. Sta. No. 12, 1918, Mac. Elev. 378 feet"	35 08 32.76	79 06 46.55	2,412
Crossroads	35 08 35.64	79 06 44.00	360
Copper nail in root of pine stump, 20 feet north of road, 8 feet northeast of oak tree, painted "U. S. P. T. 20"	35 08 57.29	79 06 39.33	2,223
Copper nail in root of dead pine tree, 6 feet west of road, painted "U. S. P. T. 21"	35 09 24.21	79 06 37.89	2,728
Longstreet Church, 3 miles north of, 1,200 feet east of N. D. Black's house, 40 feet southeast from forks; iron post stamped "Prim. Trav. Sta. No. 13, 1918, Mac. Elev. 271 feet." Azimuth to west edge of chimney on west end of N. D. Black's house, 135° 50′ 00″	35 09 48.56	79 06 46.90	2,575
Crossroads near N. D. Black's house	35 09 50.92	79 06 28.95	1,510
Copper nail in root of pine tree, 5 feet south of road, painted "U. S. P. T. 22"	35 09 53.16	79 06 18.56	889
Manchester, 6 miles west of, road opposite 6-mile post	35 10 00.46	79 06 03.54	1,450
Copper nail in root of pine tree, 5 feet south of road, painted "U. S. P. T. 23"	35 10 07.28	79 05 48.32	1,442
Manchester, 5.6 miles west of, on Little River road, 530 feet west of a creek crossing, 160 feet from frame house, 10 feet north of road; iron post stamped "Prim. Trav. Sta. No. 14, 1918, Mac. Elev. 206 feet"	35 10 12.85	79 05 21.79	2,274
Copper nail in pine stump, 200 feet easterly from small creek, 180 feet west of deserted house, 7 feet south of road, in oak tree, painted "U. S. P. T. 24"	35 10 27.02	79 04 52.47	2,823
Copper nail in root of oak tree, near forks, tree painted "U. S. P. T. 25"	35 10 31.84	79 04 25.47	2,293
Copper nail in root of double oak tree, on north side of road, tree painted "U. S. P. T. 26"	35 10 40.56	79 03 56.68	2,548
Copper nail in root of old pine stump, on south side of road, 8 feet west of pine tree, painted "U. S. P. T. 27"	35 10 51.10	79 03 24.40	2,884
Manchester, 2.75 miles west of, 380 feet west of creek crossing, 12 feet north of road, on bank, opposite two-story white house 250 feet to the south; iron post stamped "Prim. Trav. Sta. No. 15, 1918, Mac. Elev. 184 feet"	35 10 48.02	79 02 55.00	2,460
Copper nail in root of oak tree, 10 feet south of road near forks, painted "U. S. P. T. 28"	35 10 42.37	79 02 21.54	2,836
Copper nail in root of pine tree, 10 feet north of road, painted "U. S. P. T. 29"	35 10 37.52	79 01 52.82	2,433
Copper nail in root of oak tree, 750 feet east of Monroe bridge, at top of hill at forks, tree painted "U. S. P. T. 30"	35. 10 35.48	79 01 25.64	2,265
Manchester, 0.7 mile southwest of, at right angle in road, 12 feet southwest from entrance to farm buildings; iron post stamped "Prim. Trav. Sta. No. 16, 1918, Mac. Elev. 178 feet"	35 11 03.50	79 00 59.03	3,601
Manchester station, 500 feet west of, in root of pine tree; copper nail, painted "U. S. P. T. 31"	35 11 16.12	79 00 22.52	3,283
Manchester station, road crossing at	35 11 18.44	79 00 17.44	480
Manchester, 0.5 mile southeast of, near section house, 20 feet east of railroad, 60 feet southeast of crossing at tool house; iron post stamped "Prim. Trav. Sta. No. 17, 1918, Mac. Elev. 190 feet." Azimuth to pole on top of water tank, 156° 04′ 15″	35 10 55.20	79 00 04.63	2,579
U. S. C. & G. S. value (not final)	35 10 55.26	79 00 04.48	.....

ARGYLE QUADRANGLE—Continued.

Along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Cotton gin, 150 feet southwest of, south of road, in root of dead tree; copper nail, tree painted "U. S. P. T. 54"	35 04 54.91	79 00 19.85	.....
Two mail boxes, 300 feet east of forks, 9 feet south of road, in root of oak tree; copper nail, tree painted "U. S. P. T. 55"	35 05 02.06	79 01 06.84	3,972
Fayetteville, 8.5 miles west of, 300 feet west of Bennett's Mill road, near northwest corner of Red Hill Church (colored); iron post stamped "Prim. Trav. Sta. No. 23, 1918, Mac. Elev. 208 feet"	35 05 00.88	79 01 22.65	1,320
Odom and Sparks's farm house, 50 feet southwest of, in root of oak tree, north of road; copper nail, tree painted "U. S. P. T. 56"	35 05 11.89	79 02 01.69	3,429
House, 120 feet southeast of, on north side of road, beside barnyard fence, in root of oak tree; copper nail, tree painted "U. S. P. T. 57"	35 05 28.51	79 02 38.03	3,455
Deserted house, 60 feet south of, in root of oak tree, north of road; copper nail, tree painted "U. S. P. T. 58"	35 05 33.33	79 03 09.49	2,659
Bones Creek, 1 mile west of, 15 feet north of road, 300 feet southwest of small frame house; iron post stamped "Prim. Trav. Sta. No. 24, 1918, Mac. Elev. 284 feet"	35 05 38.04	79 03 49.07	3,324
Frame house in cultivated field, 250 feet south of, in root of oak, on south side of road; copper nail, tree painted "U. S. P. T. 59"	35 05 41.90	79 04 23.60	2,897
At forks, 20 feet north of road, in root of oak tree; copper nail, tree painted "U. S. P. T. 60"	35 05 48.34	79 04 54.45	2,644
Road, 12 feet north of, in root of oak tree, tree painted "U. S. P. T. 61"; copper nail	35 05 53.80	79 05 27.13	2,771
Cumberland–Hoke county line, 220 feet west of Little Rockfish Creek, 10 feet north of road, 10 feet southeast of dead pine stub painted "U. S. P. B. M."; iron post stamped "Prim. Trav. Sta. No. 25, 1918, Mac. Elev. 233 feet"	35 05 56.18	79 06 01.50	2,867
Old road, just south of, 20 feet north of present road, 4 feet northwest of dead pine tree painted "U. S. P. T. 62"; copper nail in pine stake	35 06 04.75	79 06 39.35	3,262
Longstreet, 2 miles south of, on road to Raeford, 25 feet south and 10 feet west of a crossroad; iron post stamped "Prim. Trav. Sta. No. 26, 1918, Mac. Elev. 355 feet"	35 06 15.13	79 07 18.83	3,444
Road, 16 feet east of, in root of oak tree, painted "U. S. P. T. 63"; copper nail	35 06 39.63	79 07 18.86	2,478
Road, 15 feet east of, in top of pine stump 1 foot high; copper nail, painted "U. S. B. M. 378.9 feet P. T"	35 07 29.61	79 01 08.72	.....
Road, on north side of; copper nail, painted "U. S. B. M. 340.6 feet P. T"	35 07 54.08	79 01 05.44	2,488
Oak tree, near, in oak stub; copper nail, painted "U. S. B. M. 282.2"	35 08 11.88	79 00 52.71	2,088
Crossroads, 35 feet east of, pine tree, painted "332.9 feet"	35 08 04.08	79 00 36.07	1,594
Road, 15 feet east of, in oak stub, near oak tree, painted "U. S. B. M. 332.7"; copper nail	35 08 12.00	79 00 33.89	825
Tank Hill, 300 feet east of reservoir, 350 feet southeast of wooden water tank, 1 mile southwest from headquarters, 6 feet south of tree, painted "U. S. P. B. M. 368.1"; iron post stamped "Prim. Trav. Sta. No. 27, 1918, Mac."	35 08 23.15	79 00 33.09	1,128
Road, on south edge of, near oak tree, painted "U. S. B. M. 336.5," in oak stub; copper nail	35 08 30.60	79 00 10.93	1,990
Road, south of, 100 feet north of house, in root of cedar tree painted "U. S. P. T. 69"; copper nail	35 10 22.32	79 00 52.06	.....
Road, south of, 1.5 feet east of pine tree painted "U. S. P. T. 70," in hub; copper nail	35 10 04.25	79 00 25.71	2,851
Road, south of, near tree painted "U. S. P. T. 71," in oak stub 1 foot high; copper nail	35 09 42.17	79 00 07.63	2,689

From Longstreet Church along highways to Montrose.

Longstreet Church, 0.5 mile west of, 15 feet south of road, 85 feet west of small stream, in root of pine tree painted "U. S. P. T. 81"; wire nail	35 06 21.99	79 07 52.84	.....
Longstreet Church, 1 mile west of, 20 feet north of road, at dim forks, in root of oak tree painted "U. S. P. T. 82"; wire nail	35 06 27.58	79 08 19.78	2,309
Longstreet Church, 1.5 miles west of, 15 feet south of old road, 600 feet east of creek, in root of pine tree painted "U. S. P. T. 83"; wire nail	35 06 32.56	79 08 52.82	2,794
Longstreet Church, 2.5 miles west of, on Morganton road, 2,570 feet west of creek, 2.5 miles east of battle field, 15 feet south of road; iron post stamped "Prim. Trav. Sta. No. 28, 1918, Mac. Elev. 336 feet." Azimuth to nail in top of small oak stump distant 706.5 feet, 119° 10′ 15″	35 06 41.24	79 09 29.68	3,186
Longstreet Church, 3 miles west of, 12 feet north of road, in root of oak tree painted "U. S. P. T. 84"; wire nail	35 06 50.92	79 10 06.08	3,178
Longstreet Church, 3.5 miles west of, 12 feet north of road, in root of oak tree painted "U. S. P. T. 85"; copper nail	35 06 57.27	79 10 34.57	2,452
Longstreet Church, 4 miles west of, in center of road, 23 feet northeast to pine tree, in pine root painted "U. S. P. T. 86"; copper nail	35 07 04.71	79 11 09.42	2,995
Longstreet Church, 4.5 miles west of, 200 feet southwest from frame house, near forks of road, 2 feet north of oak tree painted "U. S. P. B. M."; iron post stamped "Prim. Trav. Sta. No. 29, 1918, Mac. Elev. 439 feet"	35 07 07.06	79 11 30.17	1,741

ARGYLE QUADRANGLE—Continued.

From Longstreet Church along highways to Montrose—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Forks of road, 60 feet west of, in root of pine tree, painted "U. S. P. T. 87"; copper nail	35 07 10.55	79 11 56.23	2,193
Mr. Blue's residence, 30 feet southwest of yard gate to, 18 feet south of mail box No. 32, mail box painted "U. S. P. T 88," in root of oak tree; copper nail	35 06 58.51	79 12 19.79	2,304
Mr. Blue's residence, 3,000 feet west of, 7 feet southeast of road, 1 foot northwest of dead tree, painted "U. S. P. T. 89"; copper nail in hub	35 06 57.10	79 12 54.51	2,888
Raeford, 10 miles north of, on west side of Raeford-Vass road, at junction with road northeast to Battlefield Farm, 25 feet southwest of two mail boxes; iron post stamped "Prim. Trav. Sta. No. 30, 1918, Mac. Elev. 406 feet"	35 06 35.06	79 13 34.18	3,979
Iron post No. 30, 0.5 mile southwest of, 12 feet west of road, in root of dead pine stub 15 feet high, painted "U. S. P. T. 90"; copper nail	35 06 09.34	79 13 41.66	2,674
Iron post No. 30, 1 mile southwest of, 18 feet east of road, in root of small oak tree, painted "U. S. P. T. 91"; copper nail	35 05 44.19	79 13 46.38	2,573
Raeford, 8 miles north of, 12 feet south and 17 feet west of junction of Raeford-Vass road and chicken road, locally known as Campbell's crossroads; iron post stamped "Prim. Trav. Sta. No. 31, 1918, Mac. Elev. 417 feet"	35 05 13.64	79 13 53.44	3,143
Iron post No. 31, 0.5 mile northwest of, 15 feet east of road, in root of pine tree, painted "U. S. P. T. 92"; copper nail	35 05 19.72	79 14 0.58	2,339
Two-story white house on bank, 200 feet west of, 20 feet south of road, in root of oak tree painted "T. B. M. 318 P. T."; copper nail	35 05 23.33	79 14 58.29	3,154

Along highways. (By E. L. McNair in 1918.)

Old Yadkin road, 10 feet south of, approximately between Johnson Mountain and McPherson Mountain, near tree painted "U. S. B. M."; iron post stamped "Prim. Trav. Sta. No. 41, 1918, Mac. Elev. 466 feet"	35 08 33.13	79 14 54.90	.....
Raeford-Vass road, 30 feet west of, 15 feet north of crossing of old Morganton road; iron post stamped "Prim. Trav. Sta. No. 42, 1918, Mac. Elev. 426 feet"	35 07 43.24	79 13 36.94	.....

From bench mark 26 to bench mark 31. (By L. F. Biggs in 1918.)

Iron bench mark, 1.25 mile southeast of, 10 feet east of road, 15 feet west of oak tree painted "U. S. B. M."; iron bench mark stamped "Prim. Trav. Sta. No. 44, 1918, Mac."	35 05 06.91	79 07 11.35	.....
In base of 18-inch oak tree, 20 feet east of road, at crossroads in front of unfinished church, tree painted "U. S. P. T. 235"; copper nail	35 04 30.77	79 07 01.65	.....
Crossing of Chicken road with Raeford-Longstreet Church road, 310 feet south of, on west edge of road; iron post stamped "Prim. Trav. Sta. No. 45, 1918, Mac. Elev. 294 feet"	35 03 48.02	79 06 51.16	.....
On south side of Raeford road, opposite road north to Longstreet Church; iron post stamped "Prim. Trav. Sta. No. 46, 1918, Mac. Elev. 241 feet"	35 01 52.96	79 07 33.23	.....
Old Plank road, 10 feet north of, 50 feet east of forks; iron post stamped "Prim. Trav. Sta. No. 47, 1918. Elev. 359 feet"	35 02 44.05	79 09 57.63	.....
Road, on south edge of, east of creek, 6 feet northwest of tree painted "U. S. P. B. M."; iron post stamped "Prim. Trav. Sta. No. 48, 1918. Elev. 295 feet"	35 03 04.01	79 12 06.47	.....
Raeford-Vass road and Old Center plank road, 25 feet northwest of the intersection of; iron bench mark stamped "Prim. Trav. Sta. No. 49, 1918, B. Elev. 336 feet"	35 03 23.21	79 13 54.49	.....

From bench mark 13 to bench mark 42.

Crossroads, 30 feet northwest of, 600 feet east of main crossroads; iron bench mark stamped "Prim. Trav. Sta. No. 50, 1918, B. Elev. 302 feet"	35 09 37.96	79 08 46.91	.....
Raeford-Vass road, on east edge of, 0.5 mile south of Little River; iron post stamped "Prim. Trav. Sta. No. 51, 1918, B"	35 11 03.07	79 11 00.71	.....
Forks of road, 300 feet north of, 20 feet east of road; iron post stamped "Prim. Trav. Sta. No. 52, 1918, B"	35 09 54.64	79 12 44.58	.....

ARGYLE QUADRANGLE—Continued.

From station 261 to station 459. (By P. W. McMillen.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road, 10 feet east of, 35 feet north of forks, northwest of painted tree; iron bench mark stamped "Prim. Trav. Sta. No. 400, 1918, M"	35 07 50.75	79 01 41.57	.....

From station 468 to U. S. primary traverse station 69. (By P. W. McMillen.)

Monroe's bridge, 1.5 miles southeast of, at top of hill, east edge of road at forks, Elev. 265; iron post stamped "Prim. Trav. Sta. No. 401, 1918"	35 09 33.45	79 01 23.24	.....

From U. S. primary traverse station 209 to U. S. primary traverse station 14. (By L. F. Biggs.)

Longstreet Church, 3 miles west and 1 mile south of, at T road north; iron post stamped "Prim. Trav. Sta. No. 60, 1918, B. Elev. 290.5"	35 06 45.22	79 04 43.56	.....

From U. S. primary traverse station 10 to U. S. primary traverse station 56. (By L. F. Biggs.)

Longstreet Church, 5 miles east and 12 miles south of, 5 feet east of Yadkin road, 150 feet west of house; iron post stamped "Prim. Trav. Sta. No. 58, 1918, B. Elev. 351"	35 06 35.00	79 02 35.34	.....

From U. S. primary traverse station 7 to U. S. primary traverse station 54. (By L. F. Biggs.)

Fayetteville, 9 miles northwest of, 1 mile south of Yadkin road, 5 feet east of road near southern boundary of Camp Bragg, at forks; iron post stamped "Prim. Trav. Sta. No. 59, 1918, B"	35 06 05.33	79 00 41.63	.....

From bench mark 11 to U. S. primary traverse station 86. (By P. W. McMillen.)

Longstreet Church, 2.5 miles west of, at northwest corner of crossroads; iron bench mark stamped "Prim. Trav. Sta. No. 403, 1918, M"	35 07 21.84	79 08 44.65	.....

From U. S. primary traverse station 404 to iron bench mark 45. (By P. W. McMillen.)

Iron bench mark stamped "Prim. Trav. Sta. No. 404, 1918, M"	35 05 05.94	79 04 25.76	.....
Chicken road crossing on Little Rockfish Creek, 1 mile east of, at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 405, 1918, M"	35 03 31.26	79 04 21.85	.....

From primary traverse station 28 to primary traverse station 24. (By P. W. McMillen.)

R. J. Howard's store, 100 feet south of, on west edge of road at forks; iron post stamped "Prim. Trav. Sta. No. 406, 1918, M"	35 10 02.28	79 03 14.57	.....

From bench mark 50 to primary traverse station 408. (By P. W. McMillen.)

Longstreet Church, 1.6 miles northwest of, on second-class road leading northwest from cemetery, at top of ridge, in road forks; iron post stamped "Prim. Trav. Sta. No. 407, 1918, M. Elev. 253 feet"	35 08 22.50	79 08 23.50	.....

ARGYLE QUADRANGLE—Continued.

From bench mark 45 to bench mark 31. (By L. F. Biggs.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Abandoned house, near; iron post stamped "Prim. Trav. Sta. No. 292, 1918, B"	35 04 10.98	79 08 56.86	.....
Stream crossing, 90 feet west of, on south side of road at forks; iron post stamped "Prim. Trav. Sta. No. 54, 1918, B. Elev. 305"	35 04 24.91	79 10 45.57	.....

From primary traverse station 233 to primary traverse station 91. (By L. F. Biggs.)

Angus Ray farm, 60 feet northwest of, at T road north to, 40 feet north of road; post stamped "Prim. Trav. Sta. No. 55, 1918, B. Elev. 324"	35 06 00.92	79 10 14.46	.....

From primary traverse station 241 to bench mark 49. (By L. F. Biggs.)

Old house, 250 feet northeast of, 10 feet southwest of oak painted "U. S. B. M."; iron post stamped "Prim. Trav. Sta. No. 65, 1918, Mac"	35 01 46.74	79 10 53.93	.....
Raeford, 5 miles north of, 10 feet west of road; iron post stamped "Prim. Trav. Sta. No. 66, 1918, B"	35 02 18.34	79 14 00.67	.....

From primary traverse station 701 to primary traverse station 741. (By L. F. Biggs.)

R. H. Rollins' house, 1,000 feet southwest of, 450 feet north of James Creek, 20 feet west of road; iron post stamped "Prim. Trav. Sta. No. 69, 1918, B"	35 12 17.17	79 15 20.64	.....
Archie McNeal's house, 100 feet southwest of, on north side of road; iron post stamped "Prim. Trav. Sta. No. 70, 1918, B"	35 12 04.09	79 13 25.31	.....

From bench mark 68 to bench mark 51. (By L. F. Biggs.)

Crossroads at northwest corner of Jim Burns's field, 20 feet southeast of, iron post stamped "Prim. Trav. Sta. No. 68, 1918, B"	35 10 51.84	79 14 27.13	.....

BUCKHORN QUADRANGLE.

From bench mark 25, 1905, at Hayne, west to Autreyville. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between station.
	° ′ ″	° ′ ″	*Feet.*
Hayne, 1 mile east of, at southwest corner of Bethel Church; iron post stamped "Prim. Trav. Sta. No. 25, 1905, K" (Bull. 310, p. 63)	34 58 44.58	78 33 15.85	.....
Public school, crossroads at	34 58 38.18	78 33 37.84	1,942
Along highways.			
Bridge, center of	34 58 37.10	78 34 08.29	2,540
Along Atlantic Coast Line R. R.			
Road crossing on Atlantic Coast Line R. R	34 58 32.15	78 34 30.87	1,921
Hayne station, 60 feet west of crossing at; iron post stamped "Prim. Trav. Sta. No. 1, 1918, Mac." Azimuth to switch stand at west end of siding, 110° 53′ 30″	34 58 49.85	78 35 25.09	4,818
Hayne station, crossing 1 mile west of	34 59 07.00	78 36 19.77	4,870
Milepost 67, crossing at	34 59 26.79	78 37 23.47	5,665
Autreyville, crossing at	34 59 48.21	78 38 32.39	6,130
Autreyville, 0.5 mile west of crossing at	34 59 57.88	78 39 03.48	2,764

FAYETTEVILLE QUADRANGLE.

Along Atlantic Coast Line R. R. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Vauder station, crossing 690 feet east of	35 01 35.10	78 46 11.35	10,360
Vauder station, crossing 0.5 mile west of	35 01 41.31	78 46 39.57	2,429
Vauder station, 1.25 miles west of, 45 feet west of crossing at store, 20 feet south of track, on bank; iron post stamped "Prim. Trav. Sta. No. 3, 1918, Mac." Azimuth to water tower in Fayetteville, 105° 55′ 00″	35 01 51.97	78 47 28.94	4,245
Milepost 78, crossing 2,000 feet east of	35 02 01.02	78 48 09.06	3,461
Milepost 78, farm-road crossing 2,300 feet west of	35 02 12.40	78 48 60.75	4,450
Milepost 79, second-class crossing near	35 02 19.00	78 49 30.72	2,581
Milepost 80, crossing 500 feet east of	35 02 32.09	78 50 30.20	5,120
Cape Fear River, bridge over, crossing east of	35 02 42.51	78 51 17.54	4,074
Cape Fear River, bridge over, center of track at middle pier	35 02 45.22	78 51 31.58	1,200
Fayetteville, intersection of Russell and Dick streets	35 02 59.88	78 52 40.45	5,915
Fayetteville station (Atlantic Coast Line R. R.), 46.4 feet east from southeast corner of, in line with south end of building, 2.5 feet north of concrete sidewalk; iron post stamped "Prim. Trav. Sta. No. 4, 1918. Elev. 102 feet." Azimuth to Methodist Church spire, 288° 55′ 55″	35 03 17.29	78 53 05.37	2,718
U. S. C. & G. S. value (not final)	35 03 17.28	78 53 05.08	.....

Along highways.

Fayetteville, on south side of Hay Street, in western part of town; center of iron standpipe	35 03 22.70	78 53 56.65	4,298
Fayetteville, 2 miles northwest of, on Carthage road; T road southwest.	35 04 07.24	78 55 13.45	7,813
Fayetteville, 2.5 miles northwest of, on Carthage road; lane northeast.	35 04 31.37	78 55 55.75	4,280
Fayetteville, 3.5 miles northwest of, on Carthage road, at forks, 8 feet east of signpost; iron post stamped "Prim. Trav. Sta. No. 5, 1918, Mac." Azimuth to left edge of brick chimney on west end of house, 56° 24′ 40″	35 04 40.18	78 56 21.86	2,345
Copper nail in root of gum tree, on northeast side of road, at angle in road, painted "U. S. P. T. 1"	35 04 46.00	78 56 46.85	2,159
Copper nail in top of oak stub, 8 feet south of pine tree, painted "U. S. P. T. 2"	35 04 47.21	78 57 25.34	3,205
Beaver Creek, center of crossing	35 04 59.67	78 58 09.01	3,842
Fayetteville, 5.5 miles northwest of, 1,650 feet west of Beaver Creek, at top of hill, 12 feet south of road, 7 feet west of persimmon tree; iron post stamped "Prim. Trav. Sta. No. 6, 1918, Mac." Azimuth to east edge of chimney distant 800 feet, 171° 13′ 25″	35 05 03.34	78 58 28.28	1,643
Copper nail in root of walnut tree, 15 feet south of road, 250 feet east of white house, tree painted "U. S. P. T. 3"	35 05 17.90	78 58 52.97	2,526
Copper nail in root of oak tree, 12 feet north of road, painted "U. S. P. T. 4"	35 05 39.62	78 59 12.45	2,728
Copper nail in root of oak tree, 17 feet north of road, opposite corner of fence, painted "U. S. P. T. 5"	35 06 06.72	78 59 29.87	3,098
Fayetteville, 7.7 miles west of, 23 feet southwest of center of road, 14 feet north from persimmon tree, 25 feet south from second-class crossroad; iron post stamped "Prim. Trav. Sta. No. 7, 1918, Mac. Elev. 282 feet"	35 06 25.08	78 59 49.21	2,454

Along highways. (By E. L. McNair in 1918–19.)

Railroad track opposite whistle post, painted "U. S. P. T. 32"	35 10 31.06	78 59 51.86	.....
Second-class crossing, 30 feet south of, in telegraph pole; railroad spike, painted "U. S. P. T. 33" and "B. M. 229"	35 10 12.10	78 59 26.61	2,839
Pine tree, 6 feet southeast to, in root of pine tree; copper nail, painted "U. S. P. T. 34"	35 10 01.36	78 59 04.49	2,133
Manchester, 2.5 miles southeast of, 50 feet northeast of road crossing, on bank, about 8 feet above track; iron post stamped "Prim. Trav. Sta. No. 18, 1918, Mac. Elev. 266 feet." Azimuth to top of pole on tower of barn, 206° 37′ 00″	35 09 47.78	78 58 30.00	3,176
Manchester, 3 miles southeast of, 2,400 feet southeast of railroad crossing, in root of oak tree; copper nail, painted "U. S. P. T. 35"	35 09 26.09	78 58 17.53	2,425
Road, 8 feet east of, in root of oak tree; copper nail, painted "U. S. P. T. 37"	35 08 37.95	78 57 58.00	.....
Fayetteville, 4.5 miles northwest of, 14 feet east of road, 200 feet south of crossroads, 450 feet southwest from white house; iron post stamped "Prim. Trav. Sta. No. 19, 1918, Mac."	35 08 16.70	78 57 57.49	2,150
Road, 17 feet east of, 100 feet northwest from small house, in root of pine stump; copper nail, small oak tree painted "U. S. P. T. 38"	35 07 46.28	78 57 49.84	3,140
Road, 17 feet east of, in root of oak tree painted "U. S. P. T. 39"; spike	35 07 21.74	78 57 46.75	2,496

FAYETTEVILLE QUADRANGLE—Continued.

Along highways. (By E. L. McNair in 1918-19)—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road, 20 feet east of, near picket fence, 12 feet south of gate in front of house, in root of oak tree painted "U. S. P. T. 40"; copper nail	35 06 50.89	78 57 41.61	3,148
Road, 12 feet west of, in root of double oak tree, painted "U. S. P. T. 41"; copper nail	35 06 25.31	78 57 38.64	2,598
Fayetteville, 2 miles northwest of, east side of road, at hedge and fence row running east; iron post stamped "Prim. Trav. Sta. No. 20, 1918, Mac. Elev. 242 feet"	35 06 01.33	78 57 29.19	2,550
Public school, 150 feet west of, 30 feet east of road, in root of oak tree, painted "U. S. P. T. 42"; copper nail	35 05 34.88	78 57 18.79	2,812
Store, at corner of, on west side of road, in root of large hackberry tree; copper nail, painted "U. S. P. T. 43"	35 05 07.41	78 56 59.36	3,208

Along highways.

Fayetteville, 1 mile west of, on south side of Morganton road, in root of elm tree, painted "U. S. P. T. 44" and "T. B. M. 204.7"; copper nail	35 03 32.48	78 54 32.84	.....
Road, south of, in root of pine tree, tree painted "U. S. P. T. 45"; copper nail	35 03 38.53	78 54 58.86	2,247
Small box sluice, north end of, 5 feet southeast of pine tree, painted "U. S. P. T. 46"; copper nail	35 03 48.86	78 55 22.83	2,250
Road, 15 feet south of, near telephone pole, painted "U. S. P. T. 47"; copper nail in stake	35 03 48.82	78 55 52.85	2,496
Fayetteville, 3 miles west of, at forks of Chicken and Morganton roads, on top of bank, near signboard between roads; iron post stamped "Prim. Trav. Sta. No. 21, 1918, Mac. Elev. 219 feet"	35 03 48.93	78 55 58.37	459
Road, 12 feet south of, at edge of cotton field, in root of large gum tree painted "U. S. P. T. 48"; copper nail	35 03 54.54	78 56 29.90	2,762
Two mail boxes, tree painted "U. S. P. T. 49"	35 04 01.26	78 57 01.27	2,613
Road, 15 feet south of, in root of oak tree, painted "U. S. P. T. 50"; copper nail	35 04 08.16	78 57 35.17	2,903
Crossroads	35 04 15.67	78 57 58.33	2,071
Road, 12 feet north of, 5 feet southeast of pine tree, in small oak stub, painted "U. S. P. T. 51"; copper nail	35 04 19.01	78 58 07.89	860
Fayetteville, 5.9 miles west of, 950 feet west of Beaver Creek, on bank, 25 feet north of road, at private road leading to house; iron post stamped "Prim. Trav. Sta. No. 22, 1918, Mac. Elev. 204 feet"	35 04 29.42	78 58 46.98	3,415
At corrugated-iron road culvert, in west end of pine bank log, painted "U. S. P. T. 52"; copper nail	35 04 42.18	78 59 10.86	2,366
Bridge over creek	35 04 46.58	78 59 38.85	2,369
Opposite house, 700 feet west of creek, 15 feet north of road, on bank, in root of oak tree; copper nail, tree painted "U. S. P. T. 53"	35 04 48.28	78 59 46.88	693
Hub on "B" line at crossline 230 (Camp site survey)	35 08 45.60	78 59 39.75	.....
Crossroads near headquarters, crossing of Monroe road and Pee Dee road	35 09 01.15	78 59 17.16	2,447
Oak stump 1 foot high, in top of, near forks, tree painted "U. S. P. T. 63"; copper nail	35 09 11.61	78 58 47.92	2,651
Schoolhouse, 75 feet southwest of, in root of oak tree, painted "U. S. P. T. 64"; copper nail	35 06 46.68	78 59 43.35	.....
Road, east of, in root of oak tree, painted "U. S. P. T. 65"; copper nail	35 07 10.38	78 59 42.40	2,397
Crossroads	35 07 22.70	78 59 43.59	1,247
Road, east of, in stump, 18 feet northwest of oak tree painted "U. S. P. T. 66"; copper nail	35 07 34.29	78 59 45.06	1,174
Road, north of, in stump, oak tree painted "U. S. P. T. 67"; copper nail	35 07 59.20	78 59 37.21	2,602
Bridge, center of	35 08 00.75	78 59 36.00	187
Crossroad	35 08 11.60	78 59 36.15	1,097
Road, west of, in root of pine tree; copper nail, painted "U. S. P. T. 68"	35 08 34.96	78 59 33.15	2,373

Along highways.

Road, northeast of, in root of pine tree, painted "U. S. P. T. 72"; copper nail	35 09 21.02	78 59 39.96	.....
Road, 25 feet northeast of, in fence board at gate post, painted "U. S. P. T. 73"; copper nail	35 08 39.98	78 58 58.11	.....
Road, northeast of, 6 feet north of hickory tree, in top of stump, painted "U. S. P. T. 74"; copper nail	35 08 16.12	78 58 43.01	2,720
Road, 12 feet southwest of, in root of persimmon tree, painted "U. S. P. T. 75"; wire nail	35 07 53.05	78 58 26.34	2,713

FAYETTEVILLE QUADRANGLE—Continued.

Along highways—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road, 8 feet southwest of, in root of oak tree, painted "U. S. P. T. 76"; wire nail	35 07 31.19	78 58 10.88	2,555
Road, east edge of, in pine stump, painted "U. S. P. T. 77"; wire nail	35 07 12.42	78 58 00.23	2,093
Road, east of, in front of house, in root of oak tree, painted "U. S. P. T. 78"; wire nail	35 06 05.75	78 58 04.01	.....
Mill on Beaver Pond, 200 feet west of, in root of maple tree, painted "U. S. P. T. 79"; wire nail	35 06 01.94	78 58 34.89	2,596
Road, north of, in root of persimmon tree, painted "U. S. P. T. 80"; wire nail	35 05 43.59	78 58 50.39	2,258

From primary traverse station 38 to primary traverse station 631. (By P. W. McMillen.)

In east end of tie, on south side of pine stump, 75 feet south of road crossing, painted "U. S. P. T."; copper nail	31 09 07.58	78 57 41.71	.....

SOUTHERN PINES QUADRANGLE.

Along highways. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road, 10 feet north of, 900 feet west of creek, near tree painted "U. S. P. T. 93", in top of pine stump; copper nail	35 05 24.25	79 15 24.37	.....
Junction of roads, road northwest to Southern Pines, 15 feet south of road, in root of oak tree, painted "T. B. M. 281.3 P. T."; copper nail	35 05 22.44	79 15 35.56	943
Raeford-Vass road, 2.4 miles west of, on top of ridge, 14 feet east of road, near pine stump, painted "U. S. P. B. M. 345.3"; iron post stamped "Prim. Trav. Sta. No. 32, 1918, Mac. Elev. 345 feet"	35 04 56.55	79 15 57.75	3,202
Road, 12 feet east of, in root of oak tree; copper nail, painted "T. B. M. 317.9 P. T."	35 04 31.56	79 16 03.08	2,565
Road, 10 feet west of, in root of oak tree, painted "T. B. M. 317.4 P. T."; copper nail	35 04 07.06	79 16 11.31	2,571
Montrose, 4 miles east of, 350 feet south of Sandy Grove Church, 35 feet north and 15 feet east of crossroads; iron post stamped "Prim. Trav. Sta. No. 33, 1918, Mac. Elev. 306 feet." Azimuth to top of Daniel McCaskill monument 500 feet distant, 201° 12′ 45"	35 03 30.04	79 16 14.86	3,755
Sandy Grove Church, 0.5 mile west of, 20 feet north of road, 480 feet west of Rockfish Creek, in root of oak tree, painted "U. S. P. T. 94"; copper nail	35 03 27.72	79 16 44.54	2,480
Sandy Grove Church, 1 mile west of, 10 feet north of road, in root of pine tree, painted "U. S. P. T. 95"; copper nail	35 03 32.21	79 17 18.94	2,895
Sandy Grove Church, crossroads 1.25 miles west of	35 03 30.34	79 17 25.51	578
Sandy Grove Church, 2 miles west of, 15 feet south of road, in root of pine tree, painted "U. S. P. T. 96"; copper nail	35 03 20.95	79 17 58.56	2,907
Montrose, 2 miles east of, 25 feet south of old plank road; iron post stamped "Prim. Trav. Sta. No. 34, 1918, Mac."	35 03 14.15	79 18 22.34	2,090
Montrose, 1 mile east of, in root of oak tree, 10 feet north of road, painted "U. S. P. T. 97"; copper nail	35 03 05.51	79 18 56.13	2,941
Road, 25 feet north of, in root of dead pine tree, painted "U. S. P. T. 98"; copper nail	35 02 58.44	79 19 26.98	2,661
Road, 18 feet north of, in top of oak stub, near tree painted "U. S. P. T. 99"; copper nail	35 02 54.67	79 19 50.62	2,010

From Montrose through Aberdeen to Southern Pines.

Montrose, 1,800 feet north of, 370 feet east of railroad crossing, 18 feet north of crossroads, at corner of sanatorium grounds; iron post stamped "Prim. Trav. Sta. No. 35, 1918, Mac." Azimuth to north edge of most northeasterly chimney on Mr. Maltbie's house, 291° 15′ 00"	35 02 47.19	79 20 13.94	2,071

SOUTHERN PINES QUADRANGLE—Continued.

Along Aberdeen & Rockfish R. R.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Montrose, 1 mile northwest of, road crossing	35 03 16.02	79 20 26.87	3,108
Montrose Sanatorium, center of standpipe	35 03 31.29	79 20 46.30	2,234
Montrose Sanatorium, 1.25 miles northwest of, road crossing	35 04 21.62	79 21 10.45	5,470
Aberdeen, 5 miles southeast of, 30 feet south and 12 feet west from public-road crossing, 15 feet west of a telephone pole; iron post stamped "Prim. Trav. Sta. No. 36, 1918, Mac. Elev. 439 feet." Azimuth to sanatorium tower, 328° 16′ 45″	35 05 24.99	79 22 11.79	8,187
Aberdeen, 4 miles southeast of, second-class crossing	35 06 03.55	79 23 07.01	6,020
Aberdeen, 3 miles southeast of, second-class crossing	35 06 33.04	79 23 12.81	3,020
Aberdeen, 2 miles southeast of, at spur side track, 25 feet northeast of track, in Moore County, 0.25 mile northwest of Moore-Hoke county line; iron post stamped "Prim. Trav. Sta. No. 37, 1918, Mac." Azimuth to right-hand edge of more northeasterly of two chimneys on white house 0.75 mile distant, 133° 57′ 00″	35 06 51.31	79 23 20.39	1,952
Second-class road crossing	35 07 19.58	79 24 10.91	5,077
Public-road crossing	35 07 36.09	79 24 32.37	2,443
Do	35 07 54.04	79 24 50.78	2,373

Along Seaboard Air Line Ry.

Aberdeen, U. S. Coast and Geodetic Survey's primary traverse station "Aberdeen," 1,300 feet northeast of Aberdeen railroad station, on tangent to west rail from south, about 200 meters north of point of tangent of first curve north of Aberdeen, on edge of Sycamore Street, 14.69 meters west of west rail of main line of Seaboard Air Line Ry. Station mark: A standard-disk station mark set in top of a square block of concrete. Reference mark is on opposite side of Sycamore Street, and about 2 meters east of a garage	35 08 04.18	79 25 29.84	3,401
Aberdeen, about 1.5 miles northeast of, U. S. Coast and Geodetic Survey precise traverse station Quentin, on prolongation of tangent to the west rail from south, about 200 meters from point of tangent of first curve north of Aberdeen, or first curve north of milepost 227, 10.52 meters east of east rail of Seaboard Air Line Ry. Station mark: A standard-disk station mark set in top of a square block of concrete. Reference mark is on opposite side of railroad from station, 11.29 meters west of west rail of Seaboard Air Line Ry., on edge of bank near cut	35 08 51.12	79 24 40.65	6,260
Aberdeen, northeast of, U. S. Coast and Geodetic Survey precise traverse station Quentin A, at north end of second curve north of railroad station at Aberdeen, marked by a 2 by 4 scantling set in concrete on Seaboard Air Line Ry. right of way, on prolongation of tangent to east rail, is about 175 meters south of milepost 227, and 4.415 meters east of east rail. No reference mark	35 09 00.86	79 24 36.41	1,046
Aberdeen, northeast of, U. S. Coast and Geodetic Survey precise traverse station Quentin B, about 1 5/8 miles south of Southern Pines railroad station, on Seaboard Air Line Ry. right of way, 500 meters north of milepost 227, 175 meters south of signboard "Southern Pines", on prolongation of tangent to east rail, 10.755 meters west of west rail, at south end of third curve north of Aberdeen. Station mark: A standard-disk station mark set in top of a square block of concrete	35 09 22.12	79 24 34.24	2,157
Aberdeen, northeast of, U. S. Coast and Geodetic Survey primary traverse station Quentin C, about 1 3/8 miles south of railroad station Southern Pines, about 80 meters north of signboard "Southern Pines." Station mark: A 2 by 4 scantling set in concrete on Seaboard Air Line Ry. right of way, on third curve north of Aberdeen railroad station, about 750 meters north of milepost 227, being 15.27 meters west of west rail, about 4.5 meters above same	35 09 30.03	79 24 28.93	913
Aberdeen, northeast of, U. S. Coast and Geodetic Survey primary traverse station Quentin D	35 09 38.06	79 24 15.40	1,386
Aberdeen, northeast of, U. S. Coast and Geodetic Survey primary traverse station Quentin E	35 10 10.54	79 23 56.30	3,646
Aberdeen, northeast of, U. S. Coast and Geodetic Survey primary traverse station Foch A	35 10 28.78	79 23 26.65	3,075

SOUTHERN PINES QUADRANGLE—Continued.

From Southern Pines to bench mark 30. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Southern Pines, 0.75 mile southeast of, in top of oak stump, 12 feet east of road, near pine tree painted "U. S. P. T. 100"; copper nail.	35 10 08.76	79 23 01.03	2,933
Southern Pines, 1.5 miles southeast of, just south of house painted red, 40 feet northeast of road, in root of walnut tree, tree painted "U. S. P. T. 101"; copper nail	35 09 45.89	79 22 14.81	4,482
Southern Pines, 2.5 miles southeast of, 12 feet south of road, 2 feet east of pine tree painted "U. S. P. T. 102"; in top of small pine stub; copper nail	35 09 19.84	79 21 18.80	5,344
Southern Pines, 3.25 miles southeast of, on road to railroad, near Moore-Hoke county line, 20 feet south of road, near oak tree, iron post stamped: "Prim. Trav. Sta. No. 38, 1918, Mac." Azimuth to water tank at Southern Pines, 121° 37′ 00″	35 09 07.82	79 20 37.32	3,654
Frame house, 75 feet southwest of, 35 feet north of road, in root of oak tree, tree painted "U. S. P. T. 103"; copper nail	35 09 01.35	79 20.10.08	2,356
Road, 35 feet north of, 75 feet east of forks, in root of pine tree, tree painted "U. S. P. T. 104"; copper nail	35 08 53.98	79 19 41.39	2,498
Crossroad, 50 feet southeast of, in root of oak tree, tree painted "U. S. P. T. 105"; copper nail	35 08 51.10	79 19 09.81	2,640
Southern Pines 5.4 miles southeast of, at crossing of old graded railroad bed and old Morganton road, on top of embankment; iron post stamped "Prim. Trav. Sta. No. 39, 1918, Mac."	35 08 44.66	79 18 39.25	2,619
Old railroad grade, in top of oak stub 1 foot high, pine stump 25 feet southeast, painted "U. S. P. T. 106"; copper nail	35 09 01.13	79 18 17.72	2,443
Right of way line of old railroad grade, 100 feet northeast of road crossing, 2 feet north of pine tree painted "U. S. P. T. 107" in hub; copper nail	35 09 16.69	79 17 45.01	3,138
East side of north and south road, 30 feet north of old railroad survey, in root of oak tree, tree painted "U. S. P. T. 108"; copper nail	35 09 25.95	79 17 12.04	2,895
Old Yadkin road, north side of, near where old railroad survey line crosses road, 800 feet west of telephone line, near oak tree painted "U. S. P. B. M", iron post stamped "Prim. Trav. Sta. No. 40, 1918, Mac. Elev. 441 feet." Azimuth to water tower at sanatorium, 29° 28′ 30″	35 09 26.98	79 16 41.87	2,508
South side of road, 4 feet northwest of tree painted "U. S. P. T. 109", in top of dead stub; copper nail	35 09 19.99	79 16 12.37	2,551
Northeast side of road, in root of pine tree, painted "U. S. P. T. 110"; copper nail	35 09 11.51	79 15 43.09	2,577
South side of road, in root of dead oak tree, painted "U. S. P. T. 111"; copper nail	35 08 52.26	79 15 16.20	2,963

From station 748 to primary traverse station 104. (By L. F. Biggs in 1918.)

Southern Pines, 9 miles southeast of, 1,000 feet north of yellow house, 20 feet north of road, at angle in road; iron post stamped "Prim. Trav. Sta. No. 61, 1918, B"	35 05 59.95	79 16 20.86	.....
Southern Pines, 7 miles southeast of, south side of road, 900 feet northwest of Piney Bottom Creek bridge; iron post stamped "Prim. Trav. Sta. No. 62, 1918, B"	35 06 37.72	79 18 04.05	.....
Southern Pines, 5.7 miles southeast of, on south edge of road, at angle in crossroads; iron post stamped "Prim. Trav. Sta. No. 63, 1918, B. Elev. 405 feet"	35 08 11.11	79 18 48.66	.....
Southern Pines, 6 miles east of, 100 feet west of road forks, north of road; iron post stamped "Prim. Trav. Sta. No. 67, 1918, B"	35 10 20.73	79 17 13.70	.....

From bench mark 37 to primary traverse station 361. (By P. W. McMillen.)

Iron post stamped "Prim. Trav. Sta. No. 408, 1918"	35 06 56.60	79 20 53.74	.....

From bench mark 36 to station 5493. (By P. W. McMillen.)

Hill View schoolhouse, 60 feet south of, on south edge of road; iron post stamped "Prim. Trav. Sta. No. 409, 1918, M"	35 05 47.29	79 19 23.73	.....

SOUTHERN PINES QUADRANGLE—Continued.

From station 824 to station 748.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Chicken road crossing Rockfish Creek, on north edge of road, east side of creek; iron post stamped "Prim. Trav. Sta. No. 410, 1918, M"	35 04 46.07	79 17 22.71	.....

From primary traverse station 725 to primary traverse station 705. (By L. F. Biggs.)

Mrs. Phillips's ranch house, 0.5 mile east of, 50 feet southeast of bridge over James Creek, on west edge of road; iron post stamped "Prim. Trav. Sta. No. 71, 1918, B"	35 09 57.36	79 19 44.95	.....
Bridge over James Creek, 100 feet east of, 40 feet north of road, on small knoll; iron post stamped "Prim. Trav. Sta. No. 72, 1918, B"	35 11 16.19	79 17 33.92	.....

From bench mark 35 to bench mark 66. (By. L. F. Biggs.)

On south boundary of range, 10 feet east of boundary stake No. 149; iron post stamped "Prim. Trav. Sta. No. 73, 1918, B"	35 02 38.16	79 17 15.25	.....
In root, at boundary stake No. 289, near oak painted "U. S. P. T. 842"; copper nail	35 02 29.57	79 14 27.62	.....

From primary traverse station 773 to primary traverse station 754. (By L. F. Biggs.)

Crossroads, 300 feet south of, under power line, 2 feet southeast of P. T. 773; iron post stamped "Prim. Trav. Sta. No. 78, 1918, B"	35 07 16.02	79 15 44.14	.....

STEDMAN QUADRANGLE.

West along Atlantic Coast Line R. R. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Autryville crossing, 1 mile west of	35 00 05.63	78 39 30.03	2,343
Autryville crossing, 1.75 miles west of	35 00 16.37	78 40 15.73	3,955
Autryville crossing, 2 miles west of	35 00 20.89	78 40 36.04	1,752
Stedman station, opposite west end of, across track; iron post stamped "Prim. Trav. Sta. No. 2, 1918, Mac." Azimuth to Methodist Church spire, 184° 30′ 45″	35 00 35.45	78 41 42.78	5,744
Milepost 72, crossing at	35 00 45.42	78 42 26.57	3,780
Milepost 73, crossing near	35 00 58.82	78 43 27.04	5,210
Milepos 74, crossing 0.25 mile east of	35 01 08.56	78 44 11.05	3,791

TRIANGULATION STATIONS.

Camp Bragg Artillery Field.

CUMBERLAND, HOKE, AND RICHMOND COUNTIES.

Coordinates originally based on a position established by primary traverse run by E. L. McNair, in 1918, from traverse post No. 25, 1905, at Hayne, are in the following descriptions based on U. S. Coast and Geodetic Survey positions near Southern Pines, on approximate North American datum.

A base line 5,500.44 feet in length was measured twice, 7 miles west of Fayetteville. A tested tape 300 feet in length was used under a tension of 20 pounds; corrections were made for sag, temperature, slope, and reduction to sea level.

Azimuths were observed on Polaris near elongation at East Base station and a check azimuth at McPherson station; the mean of the two was adopted for the final computation of positions.

East Base station was connected with primary traverse station No. 53, 1918, and each of the other triangulation stations was connected with the nearest point of the primary traverse net. The field work was done by G. T. Hawkins and E. L. McNair in 1918–19; 0.28″ has been added to latitudes and 3.45″ added to longitudes to reduce them to the U. S. Coast and Geodetic Survey positions of August 9, 1919.

BENCH MARK NO. 27, CUMBERLAND COUNTY, N. C.

About 1.0 mile southwest of main part of camp, on tank hill, 300 feet east of reservoir, 400 feet southeast of tank, 35 feet northwest of point where wagon road crosses pipe line.

Signal: A 4 by 4 inch pole with targets at a right angle set over center.

Station mark: Post stamped "Prim. Trav. Sta. No. 27, Mac., 1918. Elev. 368."

[Latitude 35° 08′ 23.15″. Longitude 79° 00′ 33.14″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Vaughn	16 54 57.00	196 54 45.00	3.26269	1.138
Murchison	264 56 42.00	84 58 21.00	3.63864	2.704

CAMP BRAGG EAST BASE, CUMBERLAND COUNTY, N. C.

In a cultivated field, 1,400 feet northeast of Mr. McIlwine's residence and on his property, 400 feet north of road, 7 miles west of Fayetteville by Morganton road.

Signal: Quadripod with cross targets.

Station mark: Concrete post 5 feet long and 24 inches square, set 4 feet 8 inches in the ground, with Geological Survey tablet in top.

Reference marks: Two concrete posts 30 by 18 by 18 inches, set 26 inches in the ground northeast and southwest from center, with tablets in top. The three posts are in line along farm road, and the reference points are 25 feet from the center.

[Latitude 35° 04′ 56.44″. Longitude 78° 59′ 56.82″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Camp Bragg West Base	99 18 01.56	279 17 24.02	3.2244133	1.042
Mac	133 17 10.89	313 15 27.62	3.7956898	3.882
Vaughn	162 32 33.16	342 32 00.17	3.6849935	3.008

CAMP BRAGG WEST BASE, CUMBERLAND COUNTY, N. C.

About 8 miles west of Fayetteville, by the Morganton road, 3,000 feet west of Mr. McIlwine's house and on his land, 200 feet north of Morganton road where it descends toward creek, 65 feet northwest of unoccupied cabin.

Station mark: Bronze tablet set in block of concrete 5 feet long and 24 inches square, set 4½ feet in the ground.

Reference marks: (1) 25 feet south is concrete post 30 by 18 by 18 inches, tablet in top; (2) 25 feet west is concrete post 30 by 18 by 18 inches, tablet in top; (3) 20 feet north is concrete post 30 by 18 by 18 inches; tablet in top.

[Latitude 35° 05′ 05.23″. Longitude 79° 01′ 02.13″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Mac	144 11 48.37	324 10 42.65	3.6943161	3.074
Vaughn	182 38 59.62	2 39 04.19	3.6387276	2.704
Camp Bragg East Base	279 17 24.02	99 18 01.56	3.2244133	1.042

FAYETTEVILLE, CUMBERLAND COUNTY, N. C.

Tall iron standpipe on south side of Hay Street, in western part of Fayetteville.

Signal: Center of standpipe.

Station mark: Center of standpipe.

[Latitude 35° 03′ 22.75″. Longitude 78° 53′ 56.62″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Polly Ray	108 08 46.28	288 00 51.80	4.3423502	13.668
Mac	117 42 44.46	297 37 34.17	4.1886193	9.593
Vaughn	125 23 37.05	305 19 37.01	4.1129212	8.059
Murchison	149 23 46	329 21 36	4.04929	6.960

FINLAYSON, HOKE COUNTY, N. C.

About 18 miles west of Fayetteville, about 7 miles northeast of Raeford, 600 feet southwest of point where Chicken road crosses Mulatto road and 170 feet south of Chicken road, on highest part of hill locally known as Finlayson Mountain. Lines of sight were cut to other points.

Signal: A quadripod of poles with targets.

Station mark: Cement post 36 by 18 by 18 inches set 32 inches in ground. Survey tablet in top just over center and under signal. A tall pine tree on north edge of road was left standing and sighted from Vaughn and Mac.

Elevation, 495.063 feet (150.896 meters).

[Latitude 35° 04′ 26.63″. Longitude 79° 11′ 23.47″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Montrose Sanatorium	83 12 33.38	263 07 10.00	4.1572744	8.925
McPherson	141 34 11.50	321 31 56.90	3.9791746	5.923
Gaddys	179 21 40.68	359 21 39.27	3.7454438	3.458
Polly Ray	229 04 39.82	49 06 47.10	3.8703502	4.610
Mac	247 54 48.68	67 59 40.22	4.1416357	8.610
Vaughn	250 47 37	70 53 27	4.22718	10.484

GADDYS, HOKE COUNTY, N. C.

On timbered hill locally known as Gaddys Mountain, about 1.8 miles northwest from Fayetteville and 1.5 miles east of the Battlefield Farm.

Signal: Quadripod of poles with cross targets.

Station mark: Concrete post set 2.5 feet in ground 18 inches square on top, which is 4 inches above the surface. Geological Survey tablet in top.

Elevation, 534.851 feet (163.023 meters).

[Latitude 35° 07′ 27.20″. Longitude 79° 11′ 25.92″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Montrose Sanatorium	62	54	47.98	242	49	25.82	4.2027770	9.911
McPherson	107	58	43.82	287	56	30.55	3.7898290	3.830
Gilliland	152	05	34.12	332	03	54.20	3.9721187	5.827
Monroe	259	38	38.21	79	42	18.29	3.9930884	6.116
Polly Ray	277	05	10.27	97	07	19.04	3.7567512	3.549
Finlayson	359	21	39.27	179	21	40.68	3.7454438	3.458

GILLILAND, HOKE COUNTY, N. C.

On a wooded hill about 12 miles northeast from Southern Pines and 1 mile south of Little River. About 1 acre was cleared of bushes and trees. Station is on land owned by Mr. Gilliland.

Signal: Cross targets nailed to 10-inch pine tree.

Station mark: Concrete post 30 by 18 by 18 inches, set 26 inches in ground. Geological Survey tablet in top.

Reference mark: Signal tree 4.4 feet distant. True azimuth, 193° 30′.

Elevation, 382.254 feet (116.511 meters).

[Latitude 35° 11′ 56.09″. Longitude 79° 14′ 19.44″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
McPherson	12	57	51.73	192	57	18.28	3.8164296	4.072
Southern Pines Tank	77	11	41.83	257	06	42.82	4.1292627	8.368
Monroe	294	49	39.38	114	54	59.61	4.1905444	9.636
Polly Ray	311	46	19.15	131	50	07.96	4.1300442	8.383
Gaddys	332	03	54.20	152	05	34.12	3.9721187	5.827

MAC, CUMBERLAND COUNTY, N. C.

Mac is 12.5 miles west and north from Fayetteville by Carthage road, about 0.5 mile south of road, in woods, on highest ground on ridge and 400 feet northeast of field.

Signal: Targets at south side of platform.

Theodolite mounted on trunk of pine tree cut off 31 feet above ground, and around which a platform was built.

Station mark: Concrete post 2.5 feet long and 18 inches square, set 4 inches above surface, with tablet in top. This is set under signal.

Elevation, 417.709 feet (127.318 meters).

[Latitude 35° 07′ 15.40″. Longitude 79° 02′ 56.41″.]

To station—	Azimuth.			Back azimuth.			Distance.	
	°	′	″	°	′	″	*Log. meters.*	*Miles.*
Finlayson	67	59	40.22	247	54	48.68	4.1416357	8.610
Polly Ray	87	18	34.40	267	15	50.06	3.8598445	4.500
Monroe	123	29	30.54	303	28	17.43	3.5862196	2.396
Vaughn	263	47	22.62	83	48	32.94	3.4832108	1.934
Fayetteville	297	37	34.17	117	42	44.46	4.1886193	9.593
Camp Bragg East Base	313	15	27.62	133	17	10.89	3.7956898	3.882
Camp Bragg West Base	324	10	42.65	144	11	48.37	3.6943161	3.074

McPHERSON, HOKE COUNTY, N. C.

On low, timbered hill locally known as McPherson Mountain, 1 mile west of the Raeford-Vass road at a point 10 miles north of Raeford. Lines of sight cut to distant points.

Signal: Quadripod of poles with cross targets.

Station mark: Concrete post 2.5 feet in ground and 18 inches square on top, which is 6 inches above surface. Geological Survey tablet in top.

Instrument under signal and over center.

Elevation, 542.747 feet (165.430 meters).

[Latitude 35° 08′ 28.87″ Longitude 79° 15′ 17.51″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Montrose Sanatorium	42 15 30.93	222 12 21.85	4.0931047	7.699
Southern Pines Tank	106 14 59.49	286 10 34.12	4.0844894	7.548
Gilliland	192 57 18.28	12 57 51.73	3.8164296	4.072
Gaddys	287 56 30.55	107 58 43.82	3.7898290	3.830
Finlayson	321 31 56.90	141 34 11.50	3.9791746	5.923

MONROE, CUMBERLAND COUNTY, N. C.

About 14 miles north and west from Fayetteville and about 2 miles east and north of Longstreet Church, 0.5 mile north of Carthage road, in field, on top of ridge, and 75 feet southeast from gate.

Signal: Sawed lumber quadripod with cross targets.

Station mark: Concrete post 2.5 feet long and 18 inches square on top, which is 4 inches above surface.

Instrument over center and under signal.

Elevation, 485.894 feet (148.101 meters).

[Latitude 35° 08′ 24.44″. Longitude 79° 05′ 03.47″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Polly Ray	58 24 52.93	238 23 21.66	3.6734821	2.930
Gaddys	79 42 18.29	259 38 38.21	3.9930884	6.116
Gilliland	114 54 59.61	294 49 39.38	4.1905444	9.636
Vaughn	285 49 33.24	105 51 56.69	3.8169471	4.077
Mac	303 28 17.43	123 29 30.54	3.5862196	2.396

MONTROSE SANATORIUM, HOKE COUNTY, N. C.

Station is the center of tall standpipe at the Montrose Tuberculosis Sanatorium.

Signal: Center of standpipe.

Station mark: Center of standpipe.

Instrument off center.

[Latitude 35° 03′ 31.15″ Longitude 79° 20′ 46.34″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Southern Pines Tank	165 06 40.22	345 05 24.27	4.1140597	8.080
McPherson	222 12 21.85	42 15 30.93	4.0931047	7.699
Gaddys	242 49 25.82	62 54 47.98	4.2027770	9.911
Finlayson	263 07 10.00	83 12 33.88	4.1572744	8.925

MURCHISON, CUMBERLAND COUNTY, N. C.

Station is 20 feet north of the Murchison road, 8.5 miles from Fayetteville, and about 2,000 feet southeast from forks of Murchison and plank roads, on sand ridge covered with bush.

Signal: Quadripod of sawed lumber with targets at right angles to each other.

Station mark: Concrete post 30 inches in the ground 18 inches square at top, which is 4 inches above surface and has a Geological Survey tablet in center.

Elevation, 326.673 feet (99.570 meters).

[Latitude 35° 08′ 35.56″. Longitude 78° 57′ 41.91″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Vaughn	66 20 29	246 18 38	3.72551	3.303
Bench mark 27	84 58 21	264 56 42	3.63864	2.704
Fayetteville	329 21 36	149 23 46	4.04929	6.960

POLLY RAY, HOKE COUNTY, N. C.

About 14 miles northwest from Fayetteville and 0.75 mile west of Longstreet Church, on a knoll, locally known as Polly Ray mountain; all timber was cleared from top except one tree left for signal.

Station mark: Concrete post 36 by 18 by 18 inches, set 30 inches in ground. Geological Survey tablet in top.

Elevation, 465.755 feet (141.962 meters).

[Latitude 35° 07′ 04.28″ Longitude 79° 07′ 42.085″]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Finlayson	49 06 47.10	229 04 39.82	3.8703502	4.610
Gaddys	97 07 19.04	277 05 10.27	3.7567512	3.549
Gilliland	131 50 07.96	311 46 19.15	4.1300442	8.383
Monroe	238 23 21.66	58 24 52.93	3.6734821	2.930
Mac	267 15 50.06	87 18 34.40	3.8598445	4.500
Fayetteville	288 00 51.80	108 08 46.28	4.3423502	13.668

SOUTHERN PINES TANK, MOORE COUNTY, N. C. (Not occupied.)

Station is the center of a tall wooden water tank in a grove of pine trees, on top of hill, 0.5 mile southeast from the village of Southern Pines.

Signal: Center of tank.

[Latitude 35° 10′ 18.93.″ Longitude 79° 22′ 58.37″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Gilliland	257 06 42.82	77 11 41.83	4.1292627	8.368
McPherson	286 10 34.12	106 14 59.49	4.0844894	7.548
Montrose Sanatorium	345 05 24.27	165 06 40.22	4.1140597	8.080

VAUGHN, CUMBERLAND COUNTY, N. C.

Vaughn is on a low hill, about 9 miles northwest of Fayetteville and 0.25 mile north of Yadkin road. Brush cleared from top and signal erected over center.

Signal: A quadripod of sawed lumber.

Station mark: Concrete post 2.5 feet long and 18 inches square, projecting 4 inches above surface. Geological Survey bench mark tablet in top, just over center and under signal.

Elevation, 426.250 feet (129.821 meters).

[Latitude 35° 07′ 26.31″. Longitude 79° 00′ 54.18″.]

To station—	Azimuth.	Back azimuth.	Distance.	
	° ′ ″	° ′ ″	*Log. meters.*	*Miles.*
Camp Bragg West Base	2 39 04.19	182 38 59.62	3.6387276	2.704
Finlayson	70 53 27	250 47 37	4.22718	10.484
Mac	83 48 32.94	263 47 22.62	3.4932108	1.934
Monroe	105 51 56.69	285 49 33.24	3.8169471	4.077
Bench mark 27	196 54 45	16 54 57	3.26269	1.138
Murchison	246 18 38	66 20 29	3.72551	1.303
Fayetteville	305 19 37.01	125 23 37.05	4.1129212	8.059
Camp Bragg East Base	342 32 00.17	162 32 33.16	3.6849935	3.008

PRIMARY TRAVERSE.

Arringdale, Beckford, Boykins, Cape Fear, Emporia, Guide, Halifax, Holland, Potecasi, Shallotte, Southport, Suffolk, Supply, Wampee, White Plains, and Wilmington quadrangles.

ARRINGDALE QUADRANGLE.

BRUNSWICK, COLUMBUS, GATES, HARTFORD, HOLLAND, NEW HANOVER, AND NORTHAMPTON COUNTIES.

Along highways near south border of quadrangle. (By H. J. Switzer in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road north at R. F. D. box 64	36 30 57.6	77 29 54.5	.....
T road south at R. F. D. box 62	36 30 59.2	77 29 26.8	2,264
Center of road, in line with fence along T road north	36 31 30.4	77 28 43.1	4,768
Junction of roads to Pleasant Hill and Seaboard, signboard reads "Pleasant Hill 6 miles, Seaboard 3 miles," in grass triangle; iron post stamped "Prim. Trav. Sta. No. 3, 1918"	36 31 32.2	77 28 33.9	769
T lane north	36 31 46.3	77 27 31.8	5,262
T road south at mail box	36 32 01.0	77 26 59.1	3,059
Culvert, center of	36 32 13.5	77 26 02.9	4,752
Road north to negro cabin	36 32 30.0	77 25 18.9	3,961
Center of bridge over ditch	36 32 12.4	77 24 39.0	3,710
Culvert	36 32 15.3	77 23 47.5	4,212
T road north to Gaskins	36 32 00.0	77 22 37.9	5,892
Culvert under road	36 31 52.2	77 22 04.9	2,804
Culvert under road	36 31 51.4	77 21 23.7	3,365
Margaretsville, at intersection of county road and railroad, 33 feet south of north rail, 20 feet east of telegraph pole; iron post stamped "Prim. Trav. Sta. No. 4, 1918"	36 31 52.2	77 20 58.0	2,092
Rogers siding, road crossing at	36 32 20.1	77 19 29.7	7,746
Virginia-North Carolina State line, south rail at	36 32 42.3	77 18 17.7	6,286
Crossing of Jackson-Severn roads	36 30 14.9	77 15 23.6	.....
Junction of roads to Branchville, Margaretsville, and Pendleton	36 30 55.7	77 16 03.2	5,248
T road north	36 31 03.4	77 17 08.9	5,414
Box culvert	36 31 02.3	77 17 51.8	3,503
Box culvert	36 31 12.9	77 18 56.6	5,402
T road north	36 31 07.0	77 19 39.6	3,558
Junction of roads to Galicia and Jackson	36 31 00.2	77 20 00.7	1,856
Gate on farm road west	36 31 38.1	77 20 15.2	4,015
Prim. Trav. Sta. No. 4, 1918 (previously listed)	36 31 52.17	77 20 58.03	3,772

Magnetic declination for south border of quadrangle, 3.54° W.; near southeast corner of quadrangle, 5° 00′ W.

BECKFORD QUADRANGLE.

(By J. J. Phelan in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Savage, 1 mile east of, at junction of roads; iron post stamped "Prim. Trav. Sta. No. 13, 1905"	36 29 08.3	76 34 36.5	.....
Intersection of highway and Dismal Swamp narrow-gage railroad, east side of highway and north of track	36 29 22.6	76 34 29.8	1,544

BOYKINS QUADRANGLE.

(By C. B. Kendall in 1905.)

Station.	Latitude.	Longitude.	Distance between station.
	° ′ ″	° ′ ″	*Feet.*
Como, at southeast corner of G. C. Picot's store; iron post stamped "Prim. Trav. Sta. No. 9, 1905"	36 30 05.0	77 00 27.3	.....

North along highways near east border of quadrangle. (By J. J. Phelan in 1918.)

Como, at southwest (southeast?) corner of G. C. Picot's store; iron post stamped "Prim. Trav. Sta. No. 9, 1905" (Bull. 276, p. 104)	36 30 05.0	77 00 27.3	.....
T road northwest, in front of church; iron post stamped "Prim. Trav. Sta. No. 10, 1918, P"	36 30 14.0	77 00 16.0	1,296
Center of road, 230 feet north of Lit. Grant's mail box	36 31 35.4	77 00 55.2	8,828
T road south, 5 feet northeast of W. C. Britt's mail box	36 32 26.3	77 01 19.0	5,504
T road north, 13 feet from large cedar tree at corner of field	36 32 27.0	77 01 16.5	220
Center of road, directly in front of Adolphus Boom's house, 18 feet from mail box 16	36 32 47.2	77 01 21.1	2,074

Magnetic declination near southeast corner of quadrangle, 4.4° W.

Along Seaboard Air Line Ry. (By H. J. Switzer in 1918.)

Meherrin River, north end of bridge 37 (542 feet in length)	36 31 58.2	77 11 46.7	.....
Overhead bridge	36 31 19.8	77 11 21.2	4,404
Severn station, north end of trestle just south of	36 30 46.4	77 11 24.2	3,385
Road crossing, east rail at	36 30 08.2	77 11 34.4	3,961

Magnetic declination for south border of quadrangle, 4° 18′ W.

Near south border of quadrangle. (By J. J. Phelan in 1918.)

Como, Prim. Trav. Sta. No. 10, 1918 P	36 30 14.0	77 00 16.0	.....
Como, T road north at, in line with well and corner of store, 9 feet from well, 18 feet from store	36 30 04.8	77 00 27.4	1,312
Como, 1 mile north of store at, opposite John Jones' residence, center of road	36 30 28.4	77 01 28.5	5,530
Como, 1.25 miles north of, in angle of road forks to the southeast	36 30 32.7	77 01 39.4	980
Crossroads, in south wheel track of east and west road, 20 feet northeast of F. N. Howell's mail box No. 4	36 30 26.0	77 02 07.5	2,398
Bend in road of about 75°, large cedars to east and dense woods to west	36 30 19.5	77 02 59.4	4,287
T road east, on west side of north and south road, in line with center of road east, 6 feet northeast of Clem Grant's mail box No. 18	36 30 23.4	77 03 15.6	1,375
T road from Como-Sunshine road to Boone's bridge	36 30 33.8	77 03 16.2	1,050
Outside angle of sharp turn of road, 200 feet east of Paul Drake's gate, at mail box 50	36 30 32.9	77 03 48.2	2,620
Mount Zion Baptist Church, in center of triangle made by junction of Franklin-Como-Severn roads	36 31 17.6	77 04 20.0	5,217
Small bridge, east end of	36 31 25.5	77 04 31.2	1,213
Center of road, 20 feet northwest of Hugh Lee's mail box	36 31 36.8	77 04 51.5	2,013
T road north to Statesville	36 31 50.7	77 05 29.5	3,403
Small plank bridge, east end of	36 31 47.2	77 05 48.5	1,585
Sharp turn in road, 15 feet south of J. J. Cowper's mail box No. 40	36 31 47.6	77 06 07.1	1,520
Small plank culvert, center of	36 32 17.7	77 06 50.7	4,682
Road forks to south	36 32 20.4	77 07 37.0	3,785
Meherrin River, east end of Boone's bridge over, about 3 miles east of Severn	36 31 31.3	77 08 53.7	7,983
Northwest angle of triangle where road forks east to Como	36 30 51.3	77 09 44.9	5,814
Severn, about 1.5 miles east of, south rail of narrow-gage railroad, center of road crossing	36 31 12.2	77 10 38.6	4,897
Severn, 54 feet diagonally across from corner of Fleetwood's store, 18 feet east of railroad track; iron post stamped "Prim. Trav. Sta. No. 13, 1918, P. 59"	36 30 49.5	77 11 23.0	4,281

Magnetic declination for south border of quadrangle, 4° 14′ W.

CAPE FEAR QUADRANGLE.

South along highways. (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Small bridge	33 59 35.3	77 55 04.5	.....
Old brick chimney about 8 feet high with fire place on each side, about 600 feet south of frame house	33 59 02.9	77 55 10.1	3,309
Fort Fisher triangulation station of U. S. Coast and Geodetic Survey	33 58 08.89	77 55 00.72	5,521
Federal Point, U. S. C. E. triangulation station	33 57 35.72	77 56 28.83	8,145
Federal Point, block of concrete 18 inches square, set 3 feet in ground, marked with tablet and legend U. S. Coast and Geodetic Survey Station is on northwestern point of the mound on Federal Point. U. S. C. E. station was used as a reference mark	33 57 36.11	77 56 29.45	65

HOLLAND QUADRANGLE.

Along highways between Gatesville and Gates station. (By C. B. Kendall in 1905.)

Station.	Latitude.	Longitude.	Distance between station.
	° ′ ″	° ′ ″	*Feet.*
Gates station, crossing of road and railway, 350 feet south of	36 30 08.6	76 46 09.9	.....

Along highways betwen Como and Gates station.

Como, road forks, 2 miles northeast of, 40 feet south to pine tree, 80 feet east to pine tree	36 30 46.2	76 59 20.2	.....
Second-class road forks to northwest, 15 feet south to corner of rail fence	36 31 20.7	76 58 04.0	.....
Riddicksville, T road southeast, 40 feet south to chimney, 80 feet west to gate	36 31 38.7	76 56 22.8	.....
Mannys Ferry, east landing	36 31 43.0	76 54 45.4	.....
Mannys Ferry four corners, 1 mile southeast of	36 31 13.2	76 54 02.2	.....
T road south, northwest of Topsy, 10 feet north to fence, 30 feet southwest to fence	36 30 38.8	76 52 53.5	.....
Topsy, in angle at forks of road near store; iron post stamped "Prim. Trav. Sta. No. 10, 1905"	36 30 13.2	76 52 19.0	.....
Church, T road north, 700 feet east of	36 30 23.0	76 50 49.0	.....
T road north, 25 feet south to gate, 30 feet northeast to cedar	36 30 13.8	76 49 46.1	.....
Four corners, 20 feet east to signpost which reads "Gatesville 10 miles," 30 feet west to gum tree	36 30 07.5	76 48 38.7	.....
Second-class T road east	36 30 08.3	76 47 36.8	.....
Four corners, 25 feet west to persimmon tree, 60 feet southeast to oak tree	36 30 03.2	76 46 41.1	.....
Gates, at northeast corner of C. R. Hinton's house; iron post stamped "Prim. Trav. Sta. No. 11, 1905"	36 30 13.0	76 46 08.9	.....
Gates, railway crossing, 350 feet south of station	36 30 08.6	76 46 09.9	.....

Near southeast corner of quadrangle. (By J. J. Phelan in 1918.)

Road crossing	36 30 54.6	76 45 18.9	.....
Gates, first road crossing south of	36 30 08.6	76 46 09.8	5,238

South along highways near center of quadrangle.

Road forks, at little-traveled wood road, about 20 feet south of fence which is said to be on Virginia-North Carolina boundary line	36 33 05.7	76 51 22.8	.....
T road north	36 32 45.2	76 51 22.7	2,073
Center of small culvert	36 32 02.4	76 52 03.1	5,448
Dort, 150 feet northeast of church, 10 feet from mail box No. 38, center of road	36 31 46.8	76 52 13.0	1,770
T road south	36 31 40.5	76 52 29.8	1,510
Topsy, about 1.25 miles north of, on side of road, at point where road makes right-angle turn; iron rod 1.5 inches diameter (local survey mark)	36 31 07.5	76 52 29.3	3,340
T road south	36 30 38.9	76 52 53.3	3,494
Center of bridge over creek	36 30 28.1	76 52 44.3	1,315
Topsy, in angle at forks of road near store; iron post stamped "Prim. Trav. Sta. No. 10, 1905" (Bull. 276, p. 103)	36 30 13.2	76 52 19.0	2,559

Magnetic declination for south border of quadrangle, 4.3° W.

EMPORIA QUADRANGLE.

South along Atlantic Coast Line R.R. near east border of quadrangle. (By Herman Switzer in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Pleasant Hill, 5 feet north of semaphore; iron post stamped "Prim. Trav. Sta. No. 2, 1918"	36 31 53.3	77 32 02.4	5,089
Road crossing	36 31 36.7	77 32 06.9	1,718
Road crossing, near milepost 76	36 30 31.8	77 32 26.9	6,759
West along highways near south border of quadrangle.			
Farm lane south	36 30 01.8	77 34 59.4	.....
Five-foot bridge	36 30 22.0	77 35 42.2	4,047
T road north	36 30 33.0	77 36 12.3	2,694
T road north	36 30 36.2	77 37 10.3	4,751
Eighteen-foot bridge, east end of	36 30 22.0	77 37 59.8	4,283
Roanoke Rapids, 2.5 miles north of, at T road south, 9 feet east by 3 feet north of northwest corner of Fitzhugh's store; iron post stamped "Prim. Trav. Sta. No. 11, 1918"	36 30 00.3	77 38 43.0	4,162
T road south	36 30 14.8	77 40 06.6	6,981
T road north	36 30 22.1	77 40 48.8	3,521
T road north	36 30 38.8	77 42 26.1	8,120
Along Southern Ry. west from Emporia.			
White Church, 250 feet east of road, east edge of road opposite front door of	36 32 37.0	77 44 25.3	.....
Culvert, 18 inches by 60 inches log and plank	36 31 50.4	77 44 59.3	5,473
West along highways near south border of quadrangle.			
T road north	36 30 37.0	77 43 01.2	.....
T road north	36 30 22.3	77 43 54.6	4,612
Farm-road crossing	36 30 09.5	77 44 15.2	2,119
Farm-road crossing	36 30 07.9	77 44 43.6	2,318

Magnetic declination for south border of quadrangle, 4° 00′ W.

Near center of quadrangle. (By H. J. Switzer in 1918.)

Mail box, at T road west to Pleasant Hill	36 30 34.2	77 31 09.9	.....

GUIDE QUADRANGLE.

Along highways near south border of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Forks of road	34 00 10.0	78 32 34.6	.....
Scippco Creek, at old mill, center of south one of two bridges	34 00 30.5	78 32 37.4	2,086
Forks of road	34 00 46.6	78 33 09.4	3,151
Regan schoolhouse, in northwest corner of yard, at southeast corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 29 J, 1918"	34 00 59.5	78 33 57.5	4,253
Forks of road	34 00 48.7	78 34 43.8	4,043
Creek crossing	34 00 39.8	78 35 53.4	5,930
Forks of road	34 00 25.8	78 36 48.6	4,853
Creek crossing	34 00 33.0	78 37 17.0	2,505
Forks of road	34 00 39.0	78 37 35.0	1,623
Pineway Ferry, on Waccamaw River, west landing	34 00 36.5	78 38 28.1	4,475
Pineway, road fork in front of store	34 00 38.4	78 38 32.1	393
Conway, Pineway, and Loris road fork, (Wampee quadrangle)	33 59 52.0	78 39 05.4	5,466
Center of bridge, the west one of two	34 00 04.8	78 40 03.1	5,030
Center of bridge culvert	34 00 22.8	78 41 34.6	7,913
Forks of road	34 00 28.4	78 42 02.5	2,410
Center of road in front of house and flowing well	34 00 34.2	78 42 55.5	4,501

Magnetic declination near south border of quadrangle, 2° 10′ W.

HALIFAX QUADRANGLE.

Along highways near north border of quadrangle. (By H. J. Switzer in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road crossing on Atlantic Coast Line R. R., on east rail of east track.	36 29 40.6	77 32 42.8	.....
Small bridge, east end of	36 29 45.2	77 33 32.0	4,043

Magnetic declination for north part of quadrangle, 4° 00′ W.

POTECASI QUADRANGLE.

Along Seaboard Air Line Ry. and highways. (By H. J. Switzer in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
North end of trestle	36 29 16.0	77 11 48.2	.....
County-road crossing	36 28 46.1	77 11 57.2	3,110
Pendleton, 15 feet east of east rail of east track, 15 feet north of center of road, near railroad-crossing sign; iron post stamped "Prim. Trav. Sta. No. 15, 1918." Azimuth to south gable of corrugated iron warehouse, 3° 29′ 50″	36 28 18.3	77 12 05.4	2,890
East edge of stream crossing	36 28 28.3	77 12 26.9	2,021
East end of bridge	36 28 55.3	77 13 13.8	4,708
Farm-road crossing	36 29 13.3	77 13 42.0	2,933
South edge of branch crossing road	36 29 48.5	77 14 40.2	5,937

Magnetic declination for north border of quadrangle, 4° 18′ W.

SHALLOTTE QUADRANGLE.

Northeast along highways across northwest corner of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads	33 54 58.7	78 29 32.7	.....
Road fork	33 55 03.5	78 28 59.5	2,842
Center of road, opposite house on south side of road	33 55 29.2	78 27 36.3	7,480
Center of road, opposite blazed pine tree on south side of road	33 55 46.7	78 26 36.6	5,327
Road fork at small culvert	33 55 57.1	78 26 00.1	3,251
Road fork	33 56 15.7	78 25 10.4	4,589
Road fork south	33 56 34.2	78 24 38.0	3,305
Crossroads at church	33 57 13.9	78 24 11.7	4,585
Road fork at store	33 57 40.7	78 23 46.0	3,469
Shallotte, center of bridge over Shallotte River	33 58 20.0	78 23 12.4	4,884
Center of bridge over creek	33 58 42.2	78 22 40.0	3,527
Road fork	33 59 14.3	78 21 31.8	6,597
Crossroads	33 59 20.8	78 21 12.9	1,720
Center of bridge	33 59 37.1	78 20 26.3	4,260
Crossroads	33 59 56.2	78 19 30.8	5,049

Magnetic declination for northwest part of quadrangle, 2° 20′ W.

From north border of quadrangle south, west, and north along highways.

Crossroads	33 59 24.2	78 16 38.0	.....
Center of road, opposite large tombstone on west side of road	33 58 57.8	78 16 16.7	3,226
Road fork, at Fulwood mail box	33 58 26.5	78 15 52.5	3,760
Bachelor Creek, center of bridge over	33 58 06.7	78 15 35.9	2,445
Crossroads	33 57 44.0	78 15 37.0	2,297
Maple Creek, center of bridge over	33 57 30.3	78 15 32.1	1,447
Road fork, at signboard reading "6 miles to Supply"	33 56 38.9	78 15 15.8	5,370
Road fork, about 400 feet southeast of white schoolhouse	33 56 29.8	78 15 10.4	1,034
Crossroads	33 56 32.7	78 16 22.1	6,047

SHALLOTTE QUADRANGLE—Continued.

From north border of quadrangle south, west, and north along highways—Continued.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork, at corner of field	33 56 43.5	78 17 22.9	5,233
Crossroads	33 56 33.1	78 18 04 9	3,688
Road fork, opposite signboard reading "Sea Shore Outlet 2½ miles"	33 56 48.7	78 18 31.1	2,710
Road fork, in front of barn	33 57 06.4	78 18 45.1	2,147
Crossroads	33 57 19.6	78 19 02.2	1,957
Creek crossing	33 57 52.5	78 19 37.6	4,471
Crossroads	33 58 18.5	78 20 06.3	3,565
Sharon Branch, center of bridge crossing	33 58 31.4	78 20 32.6	2,569
Center of bridge	33 58 36.9	78 21 18.0	3,866
Road fork	33 58 41.4	78 21 40.6	1,952
Shallotte, 1 mile east of, in southeast corner of road fork, 30 feet northeast of old store, 3 feet west of signboard; iron post stamped "Prim. Trav. Sta. No. 25, J, 1918"	33 58 50.5	78 22 27.8	4,086
Center of bridge over creek (previously described)	33 58 42.2	78 22 40.0	1,327

Magnetic declination for quadrangle, 2° 30′ W.

Along highways in north part of quadrangle.

Road forks at store	33 57 40.7	78 23 46.0	.....
Center of bridge	33 57 37.1	78 24 31.8	3,870
Small stream crossing	33 57 40.2	78 25 38.0	5,590
Center of bridge	33 57 36.5	78 25 55.2	1,488
Forks of road	33 57 29.9	78 26 19.4	2,145
Center of culvert	33 57 36.4	78 27 15.1	4,734
Center of bridge	33 57 39.7	78 28 09.5	4,595
Crossroads at white church	33 57 44.5	78 28 34.0	2,119
Road forks at store	33 57 37.1	78 29 37.4	5,396

Magnetic declination for north part of quadrangle, 2° 26′ W.

SOUTHPORT QUADRANGLE.

From northwest corner of quadrangle southeast along highways. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between station.
	° ′ ″	° ′ ″	*Feet.*
T road north	33 59 47.7	78 14 06.5	.....
Center of bridge	33 59 37.9	78 13 25.4	3,600
Road fork	33 59 31.9	78 13 00.0	2,220
Center of bridge	33 59 21.5	78 12 16.2	3,831
Road fork at gate	33 59 08.1	78 11 19.9	4,930
Center of bridge	33 58 57.5	78 10 35.5	3,890
Second-class crossroads	33 58 39.9	78 09 21.7	6,460
Road fork south at mail box	33 58 32.5	78 08 50.9	2,700
At southwest corner of crossroads, Bolivia, Southport, and Supply roads; iron post stamped "Prim. Trav. Sta. No. 27 J, 1918"	33 58 18.0	78 07 50.6	5,288
Road fork	33 58 08.3	78 07 09.5	3,599
Center of road, opposite pine tree on north side, blazed and marked "U. S."	33 57 57.6	78 06 24.9	3,901
Beaver Creek, center of bridge over	33 57 38.0	78 05 02.2	7,242
Old road to south at wrecked bridge	33 57 29.3	78 04 25.7	3,201
Center of road, opposite signboard on pine tree, south side of road	33 57 24.8	78 04 06.7	1,660
Center of bridge	33 57 13.3	78 03 18.8	4,199
Center of bridge	33 56 58.2	78 02 19.0	5,266
Crossroads	33 56 52.3	78 02 06.2	1,228
Crossroads	33 56 36.0	78 01 46.4	2,340
Road fork, signboard reading "Supply 15 miles"	33 56 17.3	78 01 35.6	2,096
Road fork	33 55 56.0	78 01 25.7	2,310
Southport, Episcopal Church spire, triangulation station of the U. S. Coast and Geodetic Survey	33 55 06.21	78 01 04.20	5,349

Magnetic declination for northest part of quadrangle, 2° 45′ W.

SOUTHPORT QUADRANGLE—Continued.

Northeast to northeast corner of quadrangle. (Checked spur.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Road fork, signboard reading "Supply 15 miles" (previously described)	33 56 17.3	78 01 35.6	.....
Center of bridge at road fork	33 56 50.4	78 01 21.6	3,548
Road fork	33 57 24.4	78 01 47.5	4,070
Center of road, opposite 4-mile post	33 58 20.5	78 01 25.6	5,967
Crossroads, at signboard reading "Wilmington 25 miles"	33 58 42.0	78 01 13.9	2,385
Crossing of Spring Creek, 70 feet south of, on east side of road, 200 feet north of road fork; iron post stamped "Prim. Trav. Sta. No. 28 J, 1918"	33 58 54.4	78 01 04.0	1,506

SUFFOLK QUADRANGLE.

Along highways. (By C. B. Kendall in 1905.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road northwest, 20 feet west to corner of fence	36 30 29.8	76 43 22.9	.....
Schoolhouse, road forks at, 20 feet east to signpost reading "Sunbury 10 miles"	36 31 06.1	76 41 57.7	.....
Second-class T road east, 20 feet southeast to corner of wire fence	36 31 50.5	76 40 36.4	.....
Four corners, 15 feet southwest to signpost reading "Somerton 5 miles, Sunbury 8 miles"	36 32 30.6	76 40 17.3	.....
Second-class T road south	36 31 54.0	76 39 04.4	.....
Wiggins crossroads, 0.8 mile north of, four corners, 0.2 mile south of schoolhouse	36 31 47.0	76 38 29.6	.....
Wiggins crossroads, at southwest corner of C. C. Savage's store, iron post stamped "Prim. Trav. Sta. No. 12"	36 31 05.9	76 38 15.3	.....
Wiggins, T road east, 1.25 miles south of, 50 feet northeast to persimmon tree	36 30 05.2	76 37 57.2	.....

North along narrow-gage railroad. (By J. J. Phelan in 1918.)

Road crossing, east rail	36 30 28.1	76 35 02.9	.....
Wiggins crossroads, 3.1 miles east of, 1,118 feet northeast of railroad, at main road forks, 0.8 mile south of Corapeake, west of road; iron post stamped "38 Adj. 1903" and "Prim. Trav. Sta. No. 1 P, 1918"	36 31 16.6	76 34 34.4	5,425
Center of bridge No. 2 across swamp, 430 feet north of center of bridge No. 1	36 31 32.0	76 34 42.0	1,621
Corapeake, west rail of main line, directly opposite south end of station	36 32 07.6	76 34 35.7	3,631
Crossing of Suffolk and Corapeake highway	36 32 30.1	76 34 32.1	2,298
North Carolina-Virginia State line, brass plate in granite boundary monument on county road (Prim. Trav. Sta. No. 3 P)	36 33 02.9	76 34 32.6	3,320

Southwest along Atlantic Coast Line R. R.

Virginia-North Carolina State line, railroad signboard, 31 feet west of westerly rail	36 33 03.3	76 42 56.2	.....
Drumhill, road crossing, 50 feet southwest of	36 32 31.2	76 43 31.9	4,366
Road crossing	36 31 30.7	76 44 38.9	8,202

Southeast along highways.

T road east	36 33 01.9	76 44 14.9	.....
T road west	36 32 39.1	76 43 53.4	2,896
Drumhill, road crossing	36 32 31.2	76 43 31.9	1,925

Magnetic declination for southwest part of quadrangle, 4.7° W.

SUPPLY QUADRANGLE.

East along highways in southeast corner of quadrangle. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Crossroads	34 00 24.9	78 18 07.2	
Center of bridge	34 00 42.6	78 17 17.2	4,570
Road fork	34 01 01.3	78 16 24.0	4,865
Supply, 100 feet south of post office, on south side of road; iron post stamped "Prim. Trav. Sta. No. 26 J, 1918"	34 00 43.5	78 15 56.6	2,927
Road fork	34 00 08.6	78 15 33.9	4,008

WAMPEE QUADRANGLE.

From center of quadrangle east along highways. (By Oscar Jones in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
North Carolina and South Carolina State line	33 53 24.9	78 35 13.3	
Crossroads	33 53 23.6	78 34 49.8	1,981
Calabash post office, crossroads at	33 53 27.2	78 34 01.7	4,071
Road fork	33 53 51.3	78 33 17.6	4,442
Crossroads	33 54 24.7	78 31 43.4	8,635
Crossroads	33 54 45.9	78 30 32.0	6,383

Magnetic declination for center of quadrangle, 2° 04′ W.

Along highways near northeast corner of quadrangle.

Forks of road	33 57 52.0	78 30 38.7	
Forks of road	33 58 08.3	78 31 19.1	3,781
Forks of road	33 58 37.6	78 31 35.9	3,285
Caw Caw Creek crossing	33 58 52.3	78 31 47.7	1,786
Forks of road, at northeast corner of field	33 59 33.7	78 32 08.2	4,528

Along highways near northwest corner of quadrangle.

Center of bridge	33 58 51.2	78 44 48.1	
Forks of three roads	33 58 18.4	78 44 26.9	3,758
Center of north one of two culverts	33 57 21.7	78 44 09.0	5,939
Forks of road	33 57 05.4	78 43 45.2	2,591
Buck Creek Church, road forks at (tie point)	33 57 06.4	78 43 24.4	1,751

Magnetic declination near northwest corner of quadrangle, 2° 15′ W.

WHITE PLAINS QUADRANGLE.

South along highways near east border of quadrangle. (By J. C. Fales in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
T road west past unused store building, at corner	36 31 29.1	77 45 26.1	
Vultare, at northwest corner of crossroads; iron post stamped "Prim. Trav. Sta. No. 15, 1918"	36 31 00.4	77 46 00.9	4,063

(By H. J. Switzer in 1918.)

Farm-road crossing	36 30 29.7	77 45 30.0	3,997

WHITE PLAINS QUADRANGLE—Continued.

Along highways near south border of quadrangle. (By H. J. Switzer in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Prim. Trav. Sta. No. 15, 1918 (previously described)	36 31 00.4	77 46 00.9	.....
T road north	36 31 30.5	77 46 30.9	3,906
Farm road north	36 32 08.7	77 47 31.2	6,255
Culvert, 18-inch galvanized-iron pipe	36.31 59.9	77.48 37.6	5,498
Farm road north	36 32 02.4	77 49 05.8	2,315
Henrico, 75 feet east of store, 10 feet south of road; iron post stamped "Prim. Trav. Sta. No. 12, 1918"	36 31 57.4	77 49 42.1	2,999
East end of bridge	36 31 45.3	77 50 31.4	4,208
Farm road south, at stone gate posts, on south side of road	36 31 23.2	77 50 53.1	2,857
Culvert, 36-inch galvanized-iron pipe	36 31 17.6	77 51 32.6	3,272
Farm road north	36 31 14.2	77 52 22.4	4,077
East end of bridge	36 31 37.5	77 53 23.1	5,488
Farm road north to Gasburg	36 31 59.8	77 54 12.4	4,608
Farm road north	36 31 41.0	77 54 35.8	2,696
Box culvert	36 31 25.9	77 55 02.0	2,622
Farm road east	36 31 36.3	77 55 49.8	4,042
Junction of roads to Henrico and Ferry	36 31 55.0	77 56 13.0	2,679
Clams, at junction of roads, 25 feet west of road to White Plains, 14 feet south of road to Robertson Ferry; iron post stamped "Prim. Trav. Sta. No. 13, 1918"	36 32 29.8	77 56 36.7	4,010

Magnetic declination for south edge of quadrangle, 4° 22′ W.

WILMINGTON QUADRANGLE.

East along electric railroad (Wilmington to Wrightsville Beach). (By E. L. McNair in 1918.)

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Wilmington, corner of Third and South Market streets, center of tower of St. James Episcopal Church, U. S. C. & G. S. triangulation station	34 14 05.93	77 56 45.69	.....
Intersection of Seventeenth and Newmarket streets	34 14 12.1	77 55 40.1	5,541
Public-road crossing	34 13 45.2	77 55 33.8	2,776
Oleander station, opposite center of south track	34 13 20.3	77 54 40.5	5,138
Garden City station, center of road crossing at Audubon Nursery	34 13 01.4	77 54 00.0	3,900
Winter Park Gardens, center of road crossing	34 12 46.9	77 53 11.4	4,337
Winter Park Gardens, station at point of angle in lots, in line with telephone poles; iron post stamped "Prim. Trav. Sta. No. 1, 1917, Mac." Azimuth to tower on Presbyterian Church about 700 feet distant, 141° 54′ 15″	34 12 46.3	77 53 10.1	128

South along highways near middle of quadrangle.

Fork of road	34 11 57.5	77 52 18.4	6,569
Center of bridge over Hewlett's Creek	34 11 23.5	77 51 53.4	4,029
Fork of road in line with road south	34 11 06.4	77 51 39.4	2,089
Sea Breeze Park, fork of road at entrance	34 10 06.3	77 51 47.2	6,113
Center of stone-arch culvert over Whiskey Creek	34 09 35.2	77 51 59.4	3,306
Second-class crossroad	34 09 00.0	77 52 14.5	3,784
Crossroads near schoolhouse	34 08 12.9	77 52 38.6	5,176
Wilmington, about 8 miles southeast of, on Belt road at junction with road to Fort Fisher, about 200 feet southeast of fork of road and in line with center of roadway in three directions; iron post stamped "Prim. Trav. Sta. No. 2, 1917, Mac." Azimuth to nail in pine tree on north side of road, 295° 06′ 30″	34 08 22.5	77 53 37.5	5,040
Angle of 21° in road, on center line both ways	34 07 30.5	77 53 59.7	5,582
Second-class crossroads	34 06 51.1	77 54 03.5	3,996
Angle of 15½° in road, opposite church on west	34 05 52.0	77 53 57.3	6,000
Angle of 23½° in road, on center line both ways	34 04 39.0	77 53 39.4	7,530
Fork of road	34 03 45.6	77 53 55.9	5,570
Old road crossing at telephone line	34 03 04.4	77 54 08.6	4,300
Avenue east to Carolina Beach	34 02 11.0	77 54 25.0	5,580
Avenue east to Wilmington Beach	34 01 18.8	77 54 44.6	5,530
Angle of 9½° in road, on center line both ways	34 00 09.3	77 54 53.5	7,063
T road east to beach	34 00 00.0	77 54 56.5	973

WILMINGTON QUADRANGLE—Continued.

Northwest along highways.

Station.	Latitude.	Longitude.	Distance between stations.
	° ′ ″	° ′ ″	*Feet.*
Primary traverse station No. 2, 1917, Mac	34 08 22.5	77 53 37.5	.....
Second-class crossroads	34 08 46.0	77 54 00.3	3,050
Angle of 13½° in road, on center line both ways	34 10 04.1	77 55 16.3	10,158
Second-class crossroads	34 11 00.3	77 55 48.5	6,297
T road west	34 12 10.5	77 56 28.6	7,850
Center of bridge	34 12 43.0	77 56 44.6	3,560
Wilmington, crossing of Third and Wright streets	34 13 21.2	77 56 41.1	3,874
Wilmington, St. James Church triangulation station	34 14 05.93	77 56 45.7	4,535

Magnetic declination for northwest part of quadrangle, 2° 40′ W.

West along road and electric railway between Wilmington and Wrightsville Beach.

New Kirk triangulation station	34 14 05.57	77 47 52.56	.....
Center of driveway at north-side entrance to winter lodge of Pembroke Jones, of New York City. Point is 10 feet north of concrete wall at entrance	34 13 51.1	77 48 14.9	2,382
Wrightsville station on electric car line, about 500 feet north of, center of bridge over tidewater	34 13 11.9	77 48 51.6	5,017
Public-road crossing, south track	34 13 13.2	77 49 35.6	3,702
Public-road crossing	34 13 09.6	77 49 57.9	1,900
Seagate station, public-road crossing	34 12 43.5	77 50 17.5	3,112
Intersection of two long tangents (about 15° angle) on electric railway	34 12 36.4	77 51 23.2	5,570
Road crossing	34 12 43.7	77 52 30.1	5,660
Winter Park Gardens, road crossing, center of south track	34 12 48.05	77 53 10.69	3,440
Adjusted position	34 12 46.90	77 53 11.40	.....
(Latitude error +1.15″, longitude error −0.71″, not adjusted.)			

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